Regional Disparities in Georgia: Evidence from Microdata

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Synopsis: The purpose of this report is to take stock of the existing regionally disaggregated data and to identify disparities between the regions of Georgia, thus filling a critical gap in the literature. The analysis in this report is building on Geostat statistics, in particular the Integrated Household Survey, the Millennium Challenge Corporation Survey, and the Village Infrastructure Census. While in principle this allows for a detailed analysis of regional disparities, this is limited by issues with the data. Two issues are of importance. First, with the last census dating back to 2002, the reliability and quality of the current survey data is potentially compromised. Second, large and systematic data gaps exist for infrastructure, environmental issues, and cultural and recreational resources. It should also be noted that most surveys for any observation only indicate the region, but not the municipality. Thus any analysis is restricted to be along existing regional boundaries.

This report finds that while there are differences between regions, most of the systematic regional disparities can be explained by differences in urbanization rates across the regions. Relatively more urbanized regions, and in particular the capital city Tbilisi, tend to have a higher per capita gross value added, a more diverse and sophisticated economic structure, and a better developed infrastructure. At the same time unemployment tends to be higher in relatively more urbanized regions. This indicates not strong rural labor markets, but rather a large share of subsistence farmers in rural areas. Important dimensions of regional disparities that cannot be explained by differences in urbanization rates alone are income, inequality and poverty. While there are questions about the reliability of income data, this is an important finding as the level of urbanization, economic performance or structure, or infrastructure would not predict these outcomes.

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Table of Contents

Glossary of Abbreviations

AD	Adjara
GU	Guria
IM	Imereti
KA	Kakheti
KK	Kvemo Kartli
M-M	Mtskheta-Mtianeti
R-L/KS	Racha-Lechkhumi and Kvemo Svaneti
S-J	Samtskhe-Javakheti
SK	Shida Kartli
S-ZS	Samegrelo-Zemo Svaneti
TB	Tbilisi

Executive Summary

The purpose of this report is to take stock of the existing regionally disaggregated data and to identify disparities between the regions of Georgia. Few similar studies exist, with the major exceptions being the Diagnostic Report by the Task Force for Regional Development in Georgia (2009) and the Georgia Urbanization Review by the World Bank (2013). This report thus fills a gap, attempting to inform both future research and the formulation of regional policy. The analysis in this report is mainly building on Geostat statistics, in particular the Integrated Household Survey, the Millennium Challenge Corporation Survey, and the Village Infrastructure Census. While in principle this allows for a detailed analysis of regional disparities, this is limited by issues with the data. Two issues are of importance. First, with the last census dating back to 2002, the reliability and quality of the current survey data is potentially compromised. Second, large and systematic data gaps exist for infrastructure, environmental issues, and cultural and recreational resources. It should also be noted that most surveys for any observation only indicate the region, but not the municipality. Thus any analysis is restricted to be along existing regional boundaries.

This report finds that while there are differences between regions, most of the systematic regional disparities can be explained by differences in urbanization rates across the regions. Relatively more urbanized regions, and in particular the capital city Tbilisi, tend to have a higher per capita gross value added, a more diverse and sophisticated economic structure, and a better developed infrastructure. At the same time unemployment tends to be higher in relatively more urbanized regions. This indicates not strong rural labor markets, but rather a large share of subsistence farmers in rural areas. Important dimensions of regional disparities that cannot be explained by differences in urbanization rates alone are income, inequality and poverty. While there are questions about the reliability of income data, this is an important finding as the level of urbanization, economic performance or structure, or infrastructure would not predict these outcomes.

Important findings for the various dimensions of regional disparities include the following:

Population and Demography: Population numbers, densities and urbanization rates vary widely across regions. Tbilisi, Imereti, and Adjara are among the largest, most densely populated, and most urbanized regions. All but Adjara, and Samegrelo and Zemo Svaneti lost population since 1989, with depopulation being seemingly the most severe in mountainous regions. Significant gaps in our knowledge remain. With the last census more than ten years ago, the sample frame is likely to be outdated, reducing the quality and reliability of the available data. Some important data pertaining to the population and demographics is not readily available – in particular data on interregional and intermunicipal population movements.

Economic Performance and Structure: While there are large differences in per capita gross valued added across regions, most of these differences appear to be driven by differences in urbanization rates. There are regional disparities in economic structure, with Tbilisi being the most diversified economy, and with the regions lagging behind to varying degrees. Firms in Tbilisi also appear to be larger and more productive than firms in the regions. A gap in the existing data is the absence of any data on interregional trade flows, making it hard to evaluate economic linkages between regions.

Employment and Education: Regional disparities in unemployment are mainly driven by the urban or rural character of regions, with relatively more urbanized regions tending to have higher unemployment rates. At the same time, relatively low unemployment rates in more rural areas are likely reflecting a large share of self-employed subsistence farmers. The extent of subsistence farming is hard to establish given the available data, suggesting a need for more data on employment and economic activity. Access to at least primary and secondary education appears to be reasonably close to universal. Access to higher education seems to be more limited, given large differences in national exam scores, with Tbilisi ahead of the regions, and those regions with large ethnic minorities lagging further behind.

Social Issues: Income differences between regions are small compared to income differences across households within regions, making any robust inference about interregional differences problematic. If the data is taken at face value regional disparities in income, inequality, and the incidence of poverty exist, even after controlling for the urban or rural character of a region. Tbilisi, Samtskhe-Javakheti, and Imereti appear to have the highest incomes and the lowest incidence of poverty. Kakheti, Kvemo Kartli, and Adjara appear to have the lowest per capita incomes and the highest incidence of poverty. Given the outdated sample frame, the small sample size, and the usual issues with accurate income reporting in household surveys, all this has to be interpreted with caution.

Infrastructure: Data on infrastructure is incomplete and incoherent, and if derived from household or settlement surveys is of subjective nature. What data exists suggests that there are large disparities in infrastructure, mainly between urban and rural areas, and between Tbilisi and other urban areas. Of note is the poor state of road infrastructure, with the majority of settlements not being served by asphalted roads, even in regions with mostly non-mountainous terrain. With the various household and settlement surveys covering various dimensions of infrastructure, data availability on infrastructure could be improved by coding data not just by region, but also by municipality. Furthermore, greater efforts should be made to collect objective measures of infrastructure.

Environment: There is little data available on air, water, and soil pollution. While most of this pollution is likely to be localized, this very uneven distribution should be a prime concern for environmental policy. As for infrastructure, sewage and waste management services exhibit large regional disparities, mainly between urban and rural areas, and between Tbilisi and other urban areas.

Culture and Recreation: Little hard data is available on the provision and use of cultural or recreational resources. Given the focus of the Georgian economy on tourism, and the potential for tourism in most or even all regions of Georgia, this is a major data gap. What data is available suggests that cultural resources are mainly concentrated and overwhelmingly used in Tbilisi. Tourist facilities are somewhat less concentrated in Tbilisi, and exist mainly to cater to seaside and winter tourism.

Executive Summary – მოკლე მიმოხილვა

ანგარიშის მიზანია, რეგიონულ დონეზე აგრეგირებული მონაცემების მიხედვით შეაფასოს უთანასწორობა საქართველოს რეგიონებს შორის. მსგავსი კვლევა, თუ არ ჩავთვლით საქართველოს რეგიონული განვითარების კომისიის დიაგნოსტიკურ მოხსენებას (2009) და მსოფლიო ბანკის მიერ მომზადებულ საქართველოს ურბანიზაციის მიმოხილვას (2013), თითქმის არ არსებობს. წარმოდგენილი ანგარიში შეეცდება შეავსოს ეს სიცარიელე და გახდეს რესურსი როგორც შემდგომი კვლევისთვის, ისე რეგიონული პოლიტიკის დაგეგმვისათვის. ანალიზი ძირითადად დაფუძნებულია საქართველოს სტატისტიკის ეროვნული სამსახურის მიერ მოწოდებულ ინფორმაციაზე, კონკრეტულად კი შინამეურნეობების ინტეგრირებული გამოკვლევის, ათასწლეულის გამოწვევის კორპორაციის გამოკითხვისა და სოფლის ინფრასტრუქტურის აღწერის მონაცემებზე. მიუხედავად იმისა, რომ არსებული მონაცემებით შესაძლებელია რეგიონული უთანასწორობის დეტალური ანალიზის ჩატარება, ის მაინც შეზღუდულია ორი მთავარი მიზეზის გამო: პირველ რიგში უნდა აღინიშნოს, ბოლო აღწერა 2002 წელსაა ჩატარებული და ამჟამინდელი კვლევების სანდოობა და ხარისხი სათუოა; მეორე, დიდი და სისტემური ხარვეზები არსებობს ინფრასტრუქტურის, გარემოს დაცვის საკითხებისა და კულტურულ-რეკრეაციული რესურსების შესახებ არსებულ ინფორმაციაში. უნდა აღინიშნოს ისიც, რომ კვლევათა უმეტესობაში მითითებულია რეგიონი, მაგრამ არა მუნიციპალიტეტი, ამიტომ ანალიზი შეზღუდულია არსებულ რეგიონულ საზღვრებზე.

ანგარიში ასკვნის, რომ მიუხედავად რეგიონებს შორის არსებული განსხვავებებისა, სისტემური რეგიონული უთანასწორობების ახსნა მათი ურბანიზაციის დონეებითაა შესაძლებელი. შედარებით მეტად ურბანიზებულ რეგიონებს - თბილისი ასეთი ტიპის რეგიონის თვალსაჩინო მაგალითია - ერთ სულზე უფრო მაღალი მთლიანი დამატებული ღირებულება, უფრო მრავალფეროვანი და განვითარებული ეკონომიკური სტრუქტურა და უკეთ განვითარებული ინფრასტრუქტურა აქვთ. ამავდროულად, ურბანიზებულ რეგიონებში უმუშევრობაც უფრო მეტია, მაგრამ ეს არა კარგად განვითარებულ სასოფლო შრომის ბაზარზე, არამედ საარსებო მინიმუმის მოსაპოვებლად მომუშავე ფერმერების სიმრავლეზე მიუთითებს. თუმცა, მხოლოდ ურბანიზაციის დონე საკმარისი არაა რეგიონული უთანასწორობის ისეთი მნიშვნელოვანი მაჩვენებლების ასახსნელად, როგორიცაა შემოსავალი, უთანაბრობა და სიღარიბე. შემოსავლებზე არსებული მონაცემების საიმედოობაზე არსებობს კითხვები, მაგრამ ეს შედეგი მაინც მნიშვნელოვანია, რადგან ურბანიზაციის დონე, ეკონომიკური სტრუქტურა თუ ინფრასტრუქტურა მსგავსი პროგნოზირების გაკეთების საშუალებას არ იძლევა.

რეგიონული უთანასწორობის სხვადასხვა მაჩვენებლების შესახებ მიღებული მნიშვნელოვანი შედეგები შემდეგია:

სიღარიბე და დემოგრაფია: მოსახლეობის რაოდენობა, სიმჭიდროვე და ურბანიზაციის დონე დიდად ვარირებს რეგიონების მიხედვით. თბილისი, იმერეთი და აჭარა ყველაზე დიდ, ყველაზე მჭიდროდ დასახლებულ და ყველაზე ურბანიზებულ რეგიონებს წარმოადგენენ. აჭარის, სამეგრელოსა და ზემო სვანეთის გარდა ყველა რეგიონში დაიკლო მოსახლეობის რაოდენობამ 1989 წლის შემდეგ; ეს ეფექტი ყველაზე მეტად საგრძნობი

მაღალმთიან რეგიონებშია. უნდა აღინიშნოს, რომ ამ საკითხის გარშემო დაგროვებულ ცოდნაში ჯერ კიდევ ბევრი ხარვეზია. ბოლო აღწერა 10 წლის წინ ჩატარდა და ამიტომ დიდია ალბათობა იმისა, რომ შერჩევის ბაზა მოძველებული იყოს, რაც მონაცემების ხარისხსა და საიმედოობას შეამცირებდა. გარკვეული ტიპის მნიშვნელოვანი მონაცემები კი (მაგალითად, მონაცემები მოსახლეობის რეგიონთაშორისი და მუნიციპალიტეტთაშორისი ნაკადების შესახებ) საერთოდ არაა ხელმისაწვდომი.

ეკონომიკური ეფექტიანობა და სტრუქტურა: ერთ სულზე მთლიანი დამატებული ღირებულება ძალიან განსხვავდება რეგიონებს შორის და ამ განსხვავების დიდი წილი ურბანიზაციის დონეებს შორის სხვაობით იხსნება. არსებობს რეგიონული უთანასწორობა ეკონომიკური სტრუქტურის მხრივ: თბილისს ყველაზე მრავალფეროვანი ეკონომიკა აქვს, ხოლოდ სხვა რეგიონები მას სხვადასხვა დონით ჩამორჩებიან. თბილისში არსებული ფირმები უფრო დიდი და პროდუქტიულია სხვა რეგიონებში არსებულ ფირმებთან შედარებით. რეგიონთაშორისი სავაჭრო ნაკადების შესახებ ინფორმაციის არარსებობა კიდევ უფრო ართულებს რეგიონთა შორის არსებული ეკონომიკური კავშირების ანალიზს.

დასაქმება და განათლება: უმუშევრობაში რეგიონული უთანასწორობა ძირითადად რეგიონთა ქალაქ-სოფლის პროფილით იხსნება: შედარებით მეტად ურბანიზებულ რეგიონებს უმუშევრობის უფრო მაღალი დონე ახასიათებთ. დასაქმების შედარებით მაღალი დონე ნაკლებად ურბანიზებულ რეგიონებში დიდი ალბათობით საარსებო მინიმუმის მოსაპოვებლად მომუშავე ფერმერების სიმრავლეზე მიუთითებს. ამ უკანასკნელთა ზუსტი წილის დადგენა არსებული მონაცემებით ძნელია; საჭიროა დასაქმებისა და ეკონომიკური აქტივობის შესახებ მეტი ინფორმაციის შეგროვება. რაც შეეხება განათლებას, დაწყებით და საშუალო განათლებასთან მისაწვდომობა თითქმის უნივერსალურია. უმაღლესი განათლების მიღება შედარებით შეზღუდულია იმის გათვალისწინებით, რომ დიდია რეგიონული უთანასწორობა ერთიანი ეროვნული გამოცდების ქულებში. ამ მხრივ თბილისი ყველაზე უკეთეს შედეგს აჩვენებს, ხოლო ეთნიკური უმცირესობებით დასახლებული რეგიონები - ყველაზე უარესს.

სოციალური საკითხები: შემოსავლებს შორის სხვაობა რეგიონთა შორის მცირეა რეგიონებში შინამეურნეობათა შემოსავლებში სხვაობასთან შედარებით, რაც რეგიონთაშორისი სხვაობების შედარებას პრობლემატურს ხდის. არსებული მონაცემების მიხედვით, შემოსავლების, უთანაბრობისა და სიღარიბის დონის რეგიონული უთანასწორობა არსებობს და ურბანიზაციის დონე მის ასახსნელად არ გამოდგება. თბილისი, სამცხე-ჯავახეთი და იმერეთი ყველაზე მაღალშემოსავლიანი და ნაკლებად ღარიბი რეგიონებია, ხოლო კახეთი, ქვემო ქართლი და იმერეთი ერთ სულზე ყველაზე ნაკლები შემოსავლით და ყველაზე მაღალი სიღარიბის დონით ხასიათდებიან. მონაცემთა სიძველის, შერჩევის მცირე მოცულობისა და შემოსავლის ზუსტი აღნუსხვის მხრივ არსებული პრობლემების გათვალისწინებით ამ ინტერპრეტაციათა საიმედოობა სათუოა.

ინფრასტრუქტურა: ინფორმაცია ინფრასტრუქტურის შესახებ არათანმიმდევრული და არასრულია, ხოლო შინამეურნეობათა და დასახლებათა კვლევების შემთხვევაში ამავდროულად სუბიექტური ხასიათისააცაა. მისი მიხედვით, ინფრასტრუქტურაში, განსაკუთრებით კი ქალაქებისა და სოფლების ან თბილისისა და დანარჩენი რეგიონების

შედარებისას, დიდი უთანასწორობა არსებობს. აღსანიშნავია საგზაო ინფრასტრუქტურის ცუდი მდგომარეობა: დასახლებათა უმეტესობას, მათაც კი, რომლებიც მაღალმთიან ტერიტორიებს არ მიეკუთვნებიან, არ აქვს ასფალტის საფარიანი გზა. იმის გათვალისწინებით, რომ შინამეურნეობისა და დასახლების რამდენიმე კვლევა სწავლობს ინფრასტრუქტურის სხვადასხვა მაჩვენებლებს, ინფორმაციის ხარისხი შეიძლება გაიზარდოს მონაცემების არა მხოლოდ რეგიონების, არამედ მუნიციპალიტეტების მიხედვით კოდირების გზით. ასევე, მეტი მუშაობაა საჭირო ინფრასტრუქტურის საზომების შესახებ ობიექტური ინფორმაციის მოსაპოვებლად.

გარემო: ჰაერის, წყლისა და ნიადაგის დაბინძურების შესახებ არსებული ინფორმაცია შეზღუდულია. დაბინძურების უმეტესობა ლოკალიზებული უნდა იქნას და ეს არათანაბარი განაწილება გარემოს დაცვის პოლიტიკის ერთ-ერთი მთავარი საზრუნავი უნდა იყოს. რაც შეეხება ინფრასტრუქტურას, კანალიზაციისა და ნაგვის მენეჯმენტის სერვისებში რეგიონული უთანასწორობა დიდია. ყველაზე გამოხატულია სხვაობა ქალაქებსა და სოფლებს შორის და თბილისსა და სხვა ქალაქებს შორის.

კულტურა და დასვენება: კულტურული და დასასვენებელი რესურსების მოცულობასა და გამოყენებაზე არსებული ინფორმაცია მწირია. ქართული ეკონომიკის ტურიზმზე კონცენტრირების ხარისხისა და თითქმის ყველა რეგიონში არსებული ტურისტული პოტენციალის გათვალისწინებით, ეს ინფორმაციული ვაკუუმი საყურადღებოა. არსებული მონაცემების მიხედვით, კულტურული რესურსები კონცენტრირებულია თბილისში და ინტენსიურადაც მოიხმარება. საპირისპიროდ, ტურისტული სერვისები უფრო ნაკლებადაა წარმოდგენილი თბილისში და ძირითადად ზღვისპირა და სამთო ტურიზმის მოთხოვნას პასუხობს.

Introduction

Little research on regional disparities in Georgia exists that would allow to base regional policy on factual evidence.[2] This report takes stock of the existing regional disparities, the existing spatially disaggregated data, and attempts to answer a few basic questions about regional disparities in Georgia.

Any report about regional disparities faces several problems. In particular, it faces the question of what constitutes a region, of how to measure regional disparities, and whether existing regional disparities are policy sensitive. This report takes a pragmatic view. It bases itself on existing regions, covers various dimensions of regional disparities, and presumes that likely only obvious and blatant regional disparities matter.

The existence and magnitude of regional disparities largely depends on what constitutes a region. Depending on the boundaries and the scale of regions regional disparities might appear or vanish. One solution is to base the study of regional disparities on existing regions, with the regions chosen being as small as is possible. This would not only allow to study regional disparities across existing regions, but also to assess whether regional disparities persist, increase, or vanish as the small regions are clustered into various sets of larger regions. Fortunately for this report, the existing regions in Georgia are relatively small by international standards, with the average region being closer to NUTS-3 than to NUTS-2. For example, Tbilisi, the capital city is far larger than any of the Georgian regions. But in Germany Tbilisi would be the third-smallest state, out of sixteen states (Länder). Nevertheless, even these relatively small regions can mask disparities that exist within regions, in particular disparities between urban and rural areas. In this report an attempt is thus made to also distinguish between urban and rural areas, where possible. Distinguishing between municipalities or, for example, lowland and mountainous areas is harder. The Integrated Household Survey only distinguishes among regions, and urban and rural areas.[3] The Millenium Challenge Corporation Survey distinguishes among municipalities, but has only one observation per settlement. This restricts most analyses to be along the existing regional boundaries.

At the regional level it appears at first glance that for Georgia there is a plethora of data and statistics. Most of this data is collected and provided by Geostat and to a lesser extent other government agencies or international organizations. With the last census dating back to 1989 respectively 2002 many of the regional statistics are based on the Integrated Household Survey (SHINDA). Of importance are also the Business survey, the Millennium Challenge Corporation Settlement Survey (MCC), and the Village Infrastructure Census (VIC).

But despite the appearance of abundance, and even ignoring the lack of data at the municipal level, there are several issues. Most available data is based on household or business surveys, and covers most dimensions of economic performance and structure, employment, and living standards. Coverage of other dimensions, in particular infrastructure, environment, and cultural and recreational resources is less complete, with significant gaps remaining in these dimensions. Even ignoring the usual problems of survey data, the existing survey data suffers from an outdated sample frame and the lack of external validation via census results. The last census is

[2] Notable exceptions include Task Force for Regional Development in Georgia (2009), Japaridze (2010) and World Bank (2013).

[3] The average sample size at the municipality level would be only around 160 households. Thus even if the municipality would be reported, the sample size would almost always be too small.

dating back to 2002, which with large changes in Georgia in the past decade, potentially compromises the quality and reliability of survey data.

This report builds on existing studies. Of note is the study by the Task Force for Regional Development in Georgia (2009) on regional development in Georgia, with a focus on both regional disparities and regional policy. More recently, the Georgia Urbanization Review by the World Bank (2013) is of importance. While the World Bank study has a focus on cities and the urban system of Georgia, it is to the best of our knowledge the only comprehensive and recent study that relates to this report. The World Bank study finds that the urban system of Georgia is dominated by Tbilisi, both in terms of population, and economic performance and structure. Below Tbilisi and from a lower level, specific regions, in particular Adjara and Imereti, exert a similar dominance, leading other regions in terms of economic performance and structure. The World Bank study also finds that municipal infrastructure such as drinking water supply and sewage is poorly developed in most Georgian cities, with Tbilisi being ahead of other large cities, and a few select large cities being in turn ahead of the vast majority of smaller cities. These findings are consistent with the findings of our report. We argue that these disparities can often, but not always, be explained by different urbanization rates across regions.

Regional Disparities

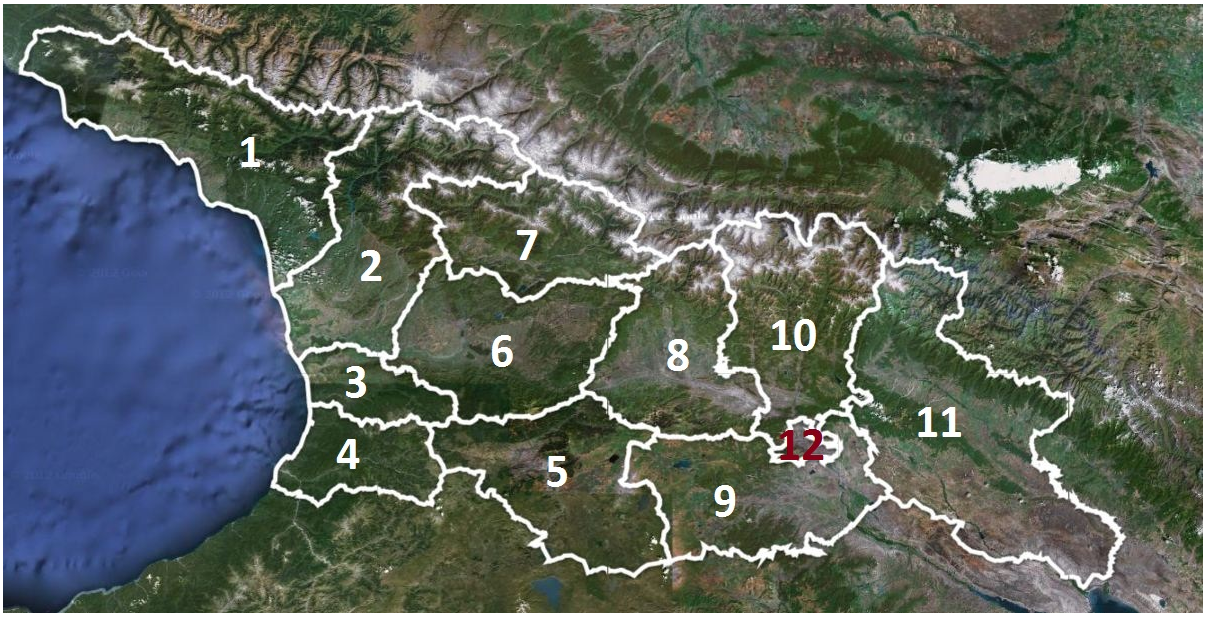
Location and Topography

Located in the South Caucasus Georgia is a small, mountainous country, comparable in area to Ireland or the Czech Republic. In the north, at the border to Russia, Georgia is dominated by the Greater Caucasus with an altitude of up to 5068 meters. In the South, at the border to Turkey and Armenia, Georgia is dominated by the Lesser Caucasus and the Javakheti plateau. In the East Georgia is bordering Azerbaijan, while in the West Georgia is bounded by the Black Sea. Eastern and Western Georgia are divided by various mountain ranges, in particular the Likhi range between Imereti and Shida Kartli, and the Gombori range between Kakheti and Tbilisi.

Administrative Divisions of Georgia

Georgia is divided into nine regions, two autonomous republics, Adjara and Abkhazia, and the capital city Tbilisi. The autonomous republic of Abkhazia is not under the control of the Georgian government, as is South Ossetia, which is mainly occupying the northern parts of Shida Kartli, and some parts of neighboring regions. This division is not prescribed by the constitution, which leaves the territorial structure of Georgia to be determined once the territorial integrity of the country has been restored. Regions are thus relatively informal, established in the early 1990s by presidential decree, with governors being representatives of the president in the municipalities.

Figure 1.0. Regions of Georgia



1	Autonomous Republic of Abkhazia	7	Racha-Lechkhumi and Kvemo Svaneti
2	Samegrelo-Zemo Svaneti	8	Shida Kartli
3	Guria	9	Kvemo Kartli
4	Autonomous Republic of Adjara	10	Mtskheta-Mtianeti
5	Samtskhe-Javakheti	11	Kakheti
6	Imereti	12	Tbilisi

Georgia is further divided into 69 local governance units, of which 64 are municipalities and five cities with special status (Tbilisi, Kutaisi, Batumi, Poti, and Rustavi).

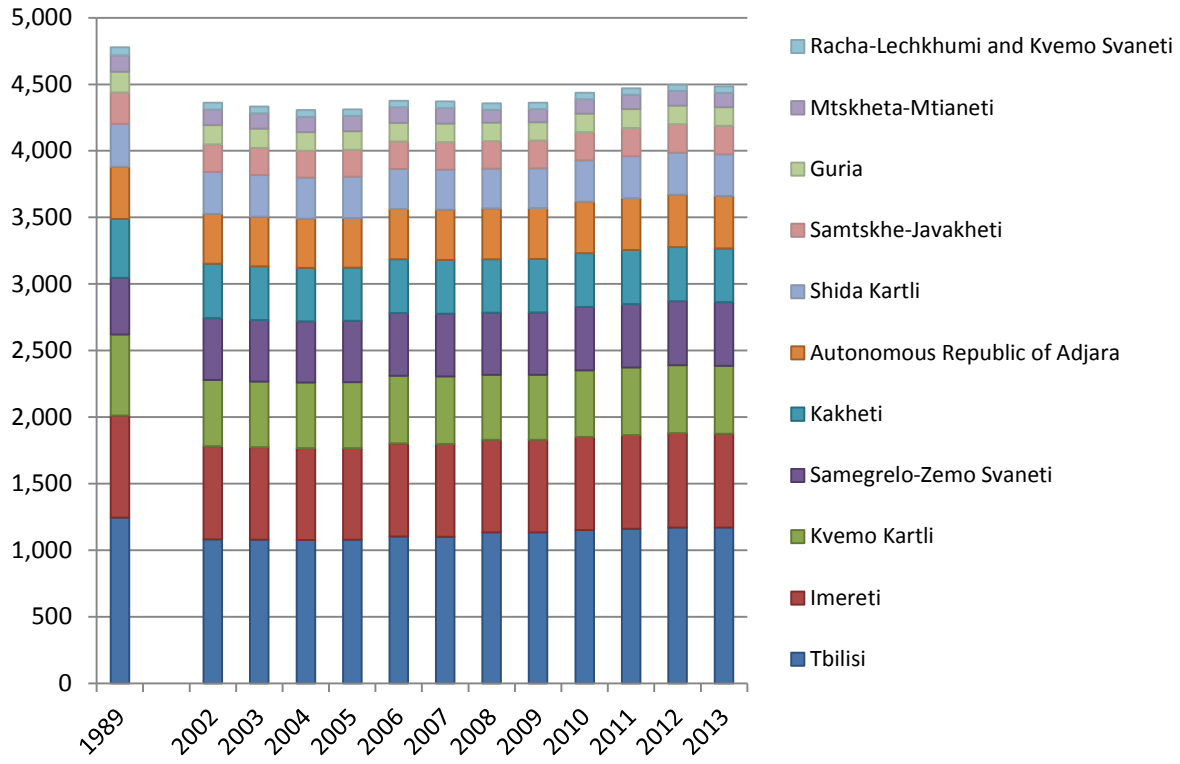
Population and Demography

Population Distribution

The last census of the Georgian population has been carried out in 2002, the one and only census since independence. Before independence various Soviet censuses are available, in particular the census of 1989, the last census including the occupied territories of Abkhazia and South Ossetia. The next census is planned for the year 2014, with results not likely to be released before 2016. Until then only estimates of the population and other demographic statistics are available, with all the resulting reliability issues. Population in this report is defined as the permanent population, that is, the population that permanently resides in a given territory irrespective of their physical presence at the moment of the census.

Throughout this report all territories currently not controlled by the Georgian Government are excluded. These territories are excluded for practical reasons, as little to no recent data is available, and as any current regional policy of the Georgian government cannot be applied in these territories.

Figure 2.1. Population size (in thousands)



Note: Figures exclude territories that are not currently controlled by the Georgian Government. Figure for population of Tbilisi in 1989 includes rural areas around the capital.

Source: Geostat webpage (2013)

The population of Georgia has declined from 4.8 million in 1989 to 4.4 million in 2002. According to the estimates of GeoStat the population of Georgia has increased since 2002 and reached roughly 4.5 million by January 2013. The population of Georgia, as well as the population of almost all Georgian regions has shrunk in absolute terms since independence. The only exceptions are Samegrelo-Zemo Svaneti and Adjara. In contrast, the shares of regions in the total population have largely remained unchanged since independence.

In 2013 the distribution of the population by regions was uneven. While the capital, Tbilisi, is home to more than one fourth of the Georgian population[4], the smallest region, Racha-Lechkhumi and Kvemo Svaneti, accounts for only slightly more than 1 percent of the Georgian population. When arranged in ascending order, regions above the median (Adjara) constitute 73 percent of the population of Georgia, while for the group below the median the same number is just 18 percent.

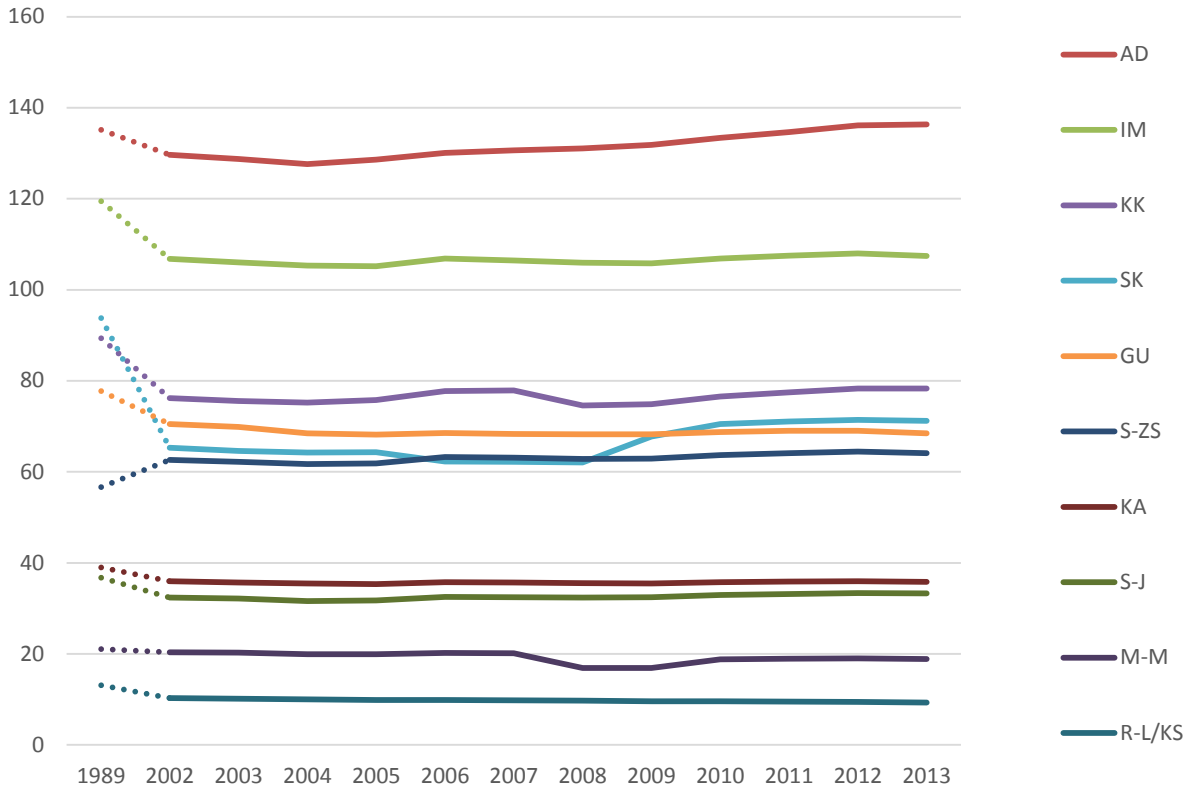
World Bank (2013) reports population changes between 1989 and 2012 within municipalities, showing population increases mainly in Adjara, regions with large inflows of internally displaced persons (municipalities bordering Abkhazia, South Ossetia, and Akhmeta municipality), and the municipality of Marneuli. Vice versa, those cities or municipalities experiencing the largest decline in population were those with a mono-industrial structure or those with large shares of ethnic minorities.

[44] And possibly even more, given that individuals might be registered in the regions, but are de-facto living in Tbilisi.

Population Density

Population densities are related to geography, the relative economic development of regions, and other factors. In order to calculate population densities we combine the population size from the 1989 and 2002 census with the areas of the regions.[5]

Figure 2.2. Population densities (Population per square kilometer, excluding Tbilisi)



Source: Geostat webpage (2013)

As to be expected, with 2324 inhabitants per km^2, Tbilisi is far more densely populated than any region. As for the regions, all regions, with the exception of Samegrelo and Zemo Svaneti, experienced a decline in population density from 1989 to 2002. Between 1989 and 2013 only Adjara and Samegrelo and Zemo Svaneti experienced an increase in population density.

The ranking in terms of population densities differs from that in terms of absolute population sizes. While Adjara is the mean region in terms of population size, it is the most densely populated region outside Tbilisi. At the same time Guria, the third smallest region in terms of absolute population is the median region in terms of population density. It is evident that mountainous regions tend to be more sparsely populated than lowland regions, and that regions with large cities are more densely populated than more rural regions.

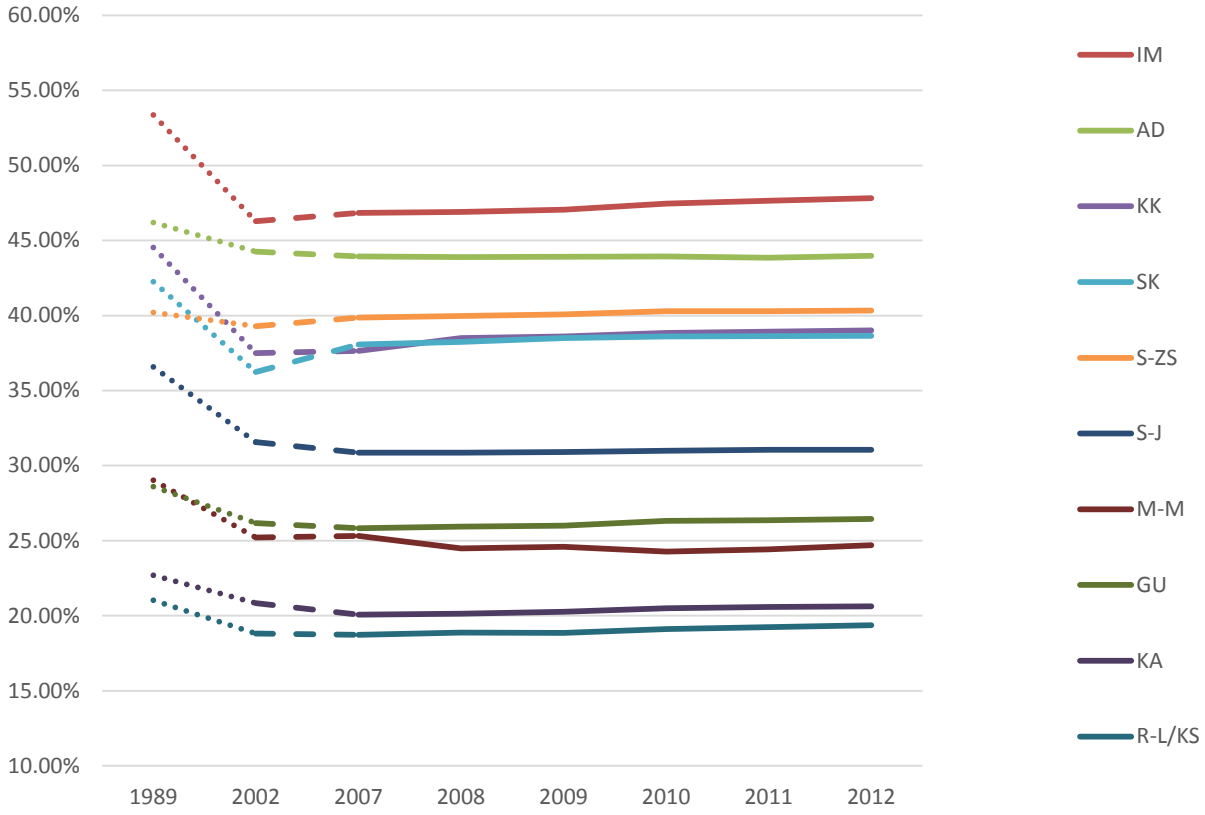
Urbanization

The capital city Tbilisi is far more urbanized than any other region, with an urbanization rate close to one hundred percent. Other regions with high urbanization rates include Imereti and Adjara, while the least densely populated regions tend to be mountainous. Urbanization rates are stable over time, with the largest drop occurring between 1989 and 2002. All regions except

[5] Note that the area of Tbilisi has slightly increased, as Tbilisi was enlarged in 2008.

Samegrelo and Zemo Svaneti are less urbanized in 2012 than in 1989.[6] The World Bank (2013) study computes urbanization rates at the municipal level, suggesting a broadly similar pattern. Of note are high urbanization rates in the municipalities of Akhaltsikhe, Borjomi, and Khashuri, possibly reflecting the concentration of the population in a few cities in the canyon formed by the Mtkvari river.

Figure 2.3. Urbanization rates (in percent)



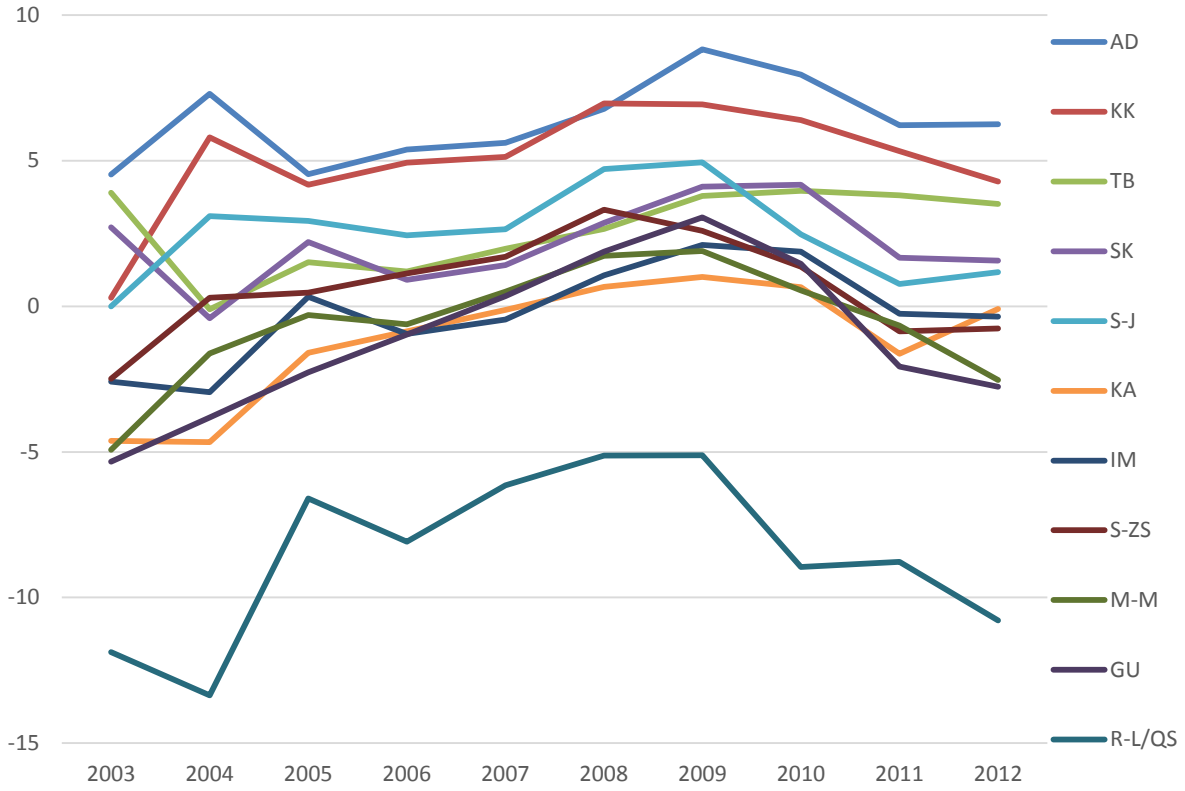
Source: Geostat webpage (2012)

Age Structure

There is no up to date information on regional population by age cohort. Nevertheless, the age profile of regions can be inferred from birth and death rates. The natural population changes are defined as the difference between births and deaths per one thousand of population. While many factors influence regional birth and death rates, the age profile of a region is a major factor. A large difference between births and deaths potentially indicates an ageing population in a region.

[6] While none of the Georgian regions could be called urbanized or even intermediate urbanized according to the OECD typology of regions, throughout this report we adopt the convention to classify the relatively more urbanized regions of Georgia, such as Adjara or Imereti, as urban regions or relatively more urbanized regions.

Figure 2.4. Natural population change (per one thousand of population)



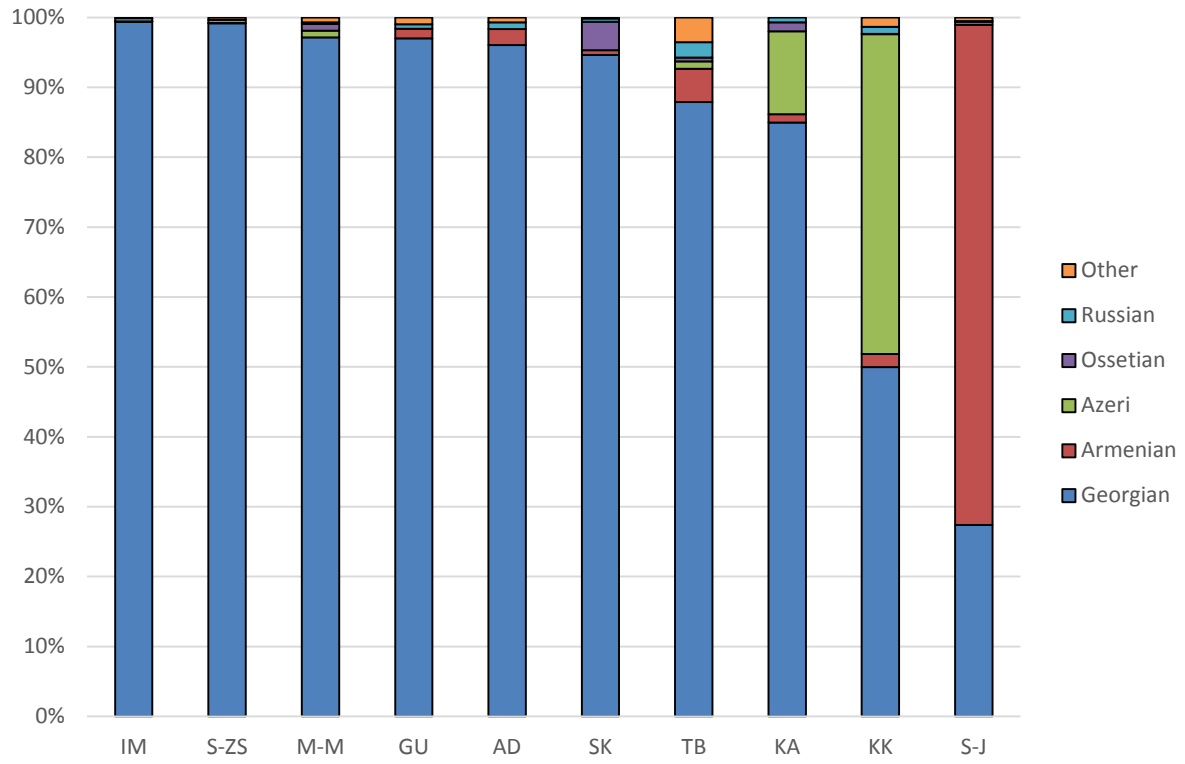
Source: Geostat webpage (2012)

Only three regions, Adjara, Kvemo Kartli and Samtskhe-Javakheti, have been growing each and every year during the last decade. These three regions have large shares of ethnic or religious minorities, possibly indicating culture as an explanatory factor. Racha-Lechkhumi and Kvemo Svaneti stands out as a region which had far more deaths than births each and every year, far more than any other region. This seems to indicate an ageing population, possibly driven by young people moving out of the region. As this region is the only region that is overwhelmingly mountainous this suggests that other mountainous parts of Georgia exhibit a similar pattern. This unfortunately is impossible to corroborate with no data on births and deaths at the municipality level existing. Indirectly, the share of pensioners in the total population, as reported by World Bank (2013), is additional evidence. The share of pensioners is by far the largest in Racha-Lechkhumi and Kvemo Svaneti, followed by Guria and Mtskheta-Mtianeti, suggesting that indeed mountainous regions are experiencing depopulation, with young people moving to the lowlands and old people remaining behind.

Ethnic Composition

Data about ethnic minorities in Georgia is similarly sparse. In the absence of official figures, we estimate the ethnic composition of the regions from the Integrated Household Survey (2011). These figures exclude the population under 15 years old. According to our estimates, most regions are homogeneous, that is, more than 90% of the adult population are ethnic Georgians. The main ethnic minorities are Armenians and Azeris. While Samtskhe-Javakheti has the largest share of Armenians, Azeris mainly reside in Kvemo Kartli and Kakheti.

Figure 2.5. Ethnic minorities (in percent)



Source: Own calculations, Integrated Household Survey (2011)

Internal Migration

Internal migration can to some extent be estimated from the Integrated Household Survey. According to our estimates, 66 percent of the Georgian population over 15 years old has migrated internally, that is live at a different place than their place of birth. More than 11 percent have recently migrated, i.e. within the last five years. These numbers are significantly lower if only migration between regions is considered, as in the table below.

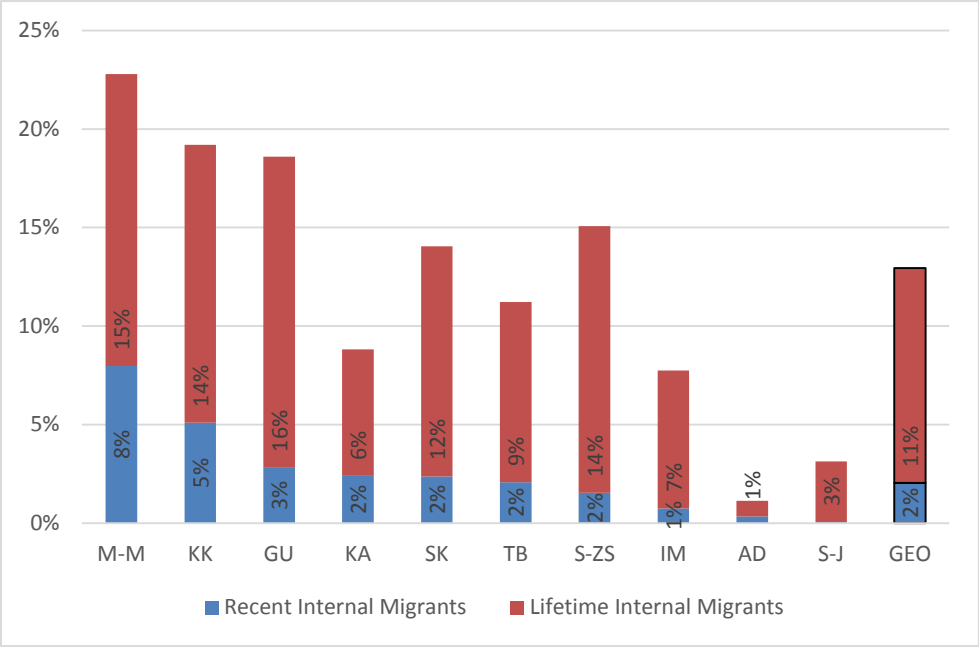
Table 2.6. Internal migration (in percent of total population)

Country	Year of Survey	Zonal System	Internal Migrants	Recent Migrants	Recent as a % of Internal Migrants
Belarus	2009	Regions	10.8	n.a.	n.a.
Canada	2009	Provinces	n.a.	3.4	n.a.
Chile	2009	Regions	21.3	6.3	29.6
Georgia	*2011*	*Regions*	*10.9*	*2.0*	*18.7*
USA	2000	States	31.6	8.9	28.3

Source: Own calculations, Integrated Household Survey (2011); and Bell and Muhidin (2009)

A comparison with other countries suggests that mobility in Georgia is neither extraordinarily low nor high. But even if one accepts that mobility in Georgia is reasonably high, an interpretation is difficult. On one side high mobility reduces the impact of regional disparities. On the other side a high mobility could also suggest that regional disparities are large, forcing individuals and households to move to other regions.

Figure 2.7. Internal migration (Share of interregional migrants resident in a region)



Source: Own calculations, Integrated Household Survey 2011

Relatively more rural regions tend to have larger shares of both recent and lifetime migrants. While this might be partially driven by relatively smaller population numbers in these regions, this still suggests that a pattern of migration being mostly aimed at Tbilisi, as reported in World Bank (2013), cannot be taken for granted.

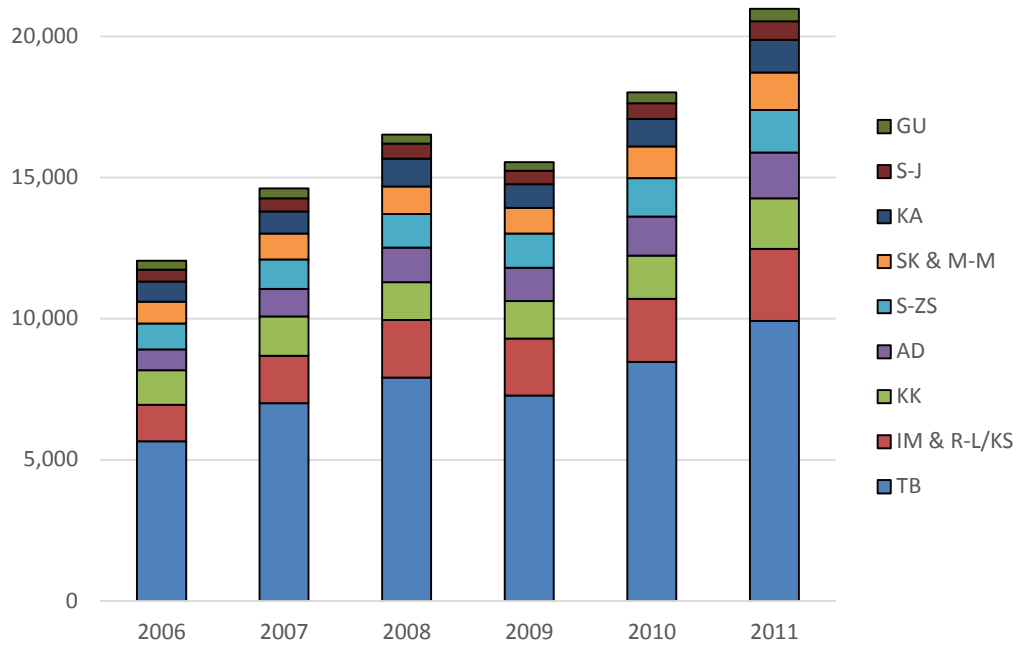
Summary: Population numbers, densities and urbanization rates vary widely across regions. Tbilisi, Imereti, and Adjara are among the largest, most densely populated, and most urbanized regions. All but Adjara, and Samegrelo and Zemo Svaneti lost population since 1989, with depopulation being seemingly the most severe in mountainous regions. Significant gaps in our knowledge remain. With the last census more than ten years ago, the sample frame is likely to be outdated, reducing the quality and reliability of the available data. Some important data pertaining to the population and demographics is not readily available – in particular data on interregional and intermunicipal population movements.

Economic Structure and Performance

Gross Value Added

Geostat provides data on gross-valued added (GVA) at the regional level, based on national accounts. Several regions are combined by Geostat into larger regions, that is, Mtskheta-Mtianeti is combined with Shida Kartli, and Racha-Lechkhumi and Kvemo Svaneti with Imereti. There are several reasons why gross value added figures should be interpreted with caution. First, the exact location of economic activity is often ambiguous, in particular if regions are relatively small and economically well integrated. Second, gross value added is not identical to GDP, as it excludes all taxes and subsidies. Third, with price level differences across regions it overstates real economic activity in regions with higher price levels.

Figure 3.1. Regional gross value added (in million GEL)

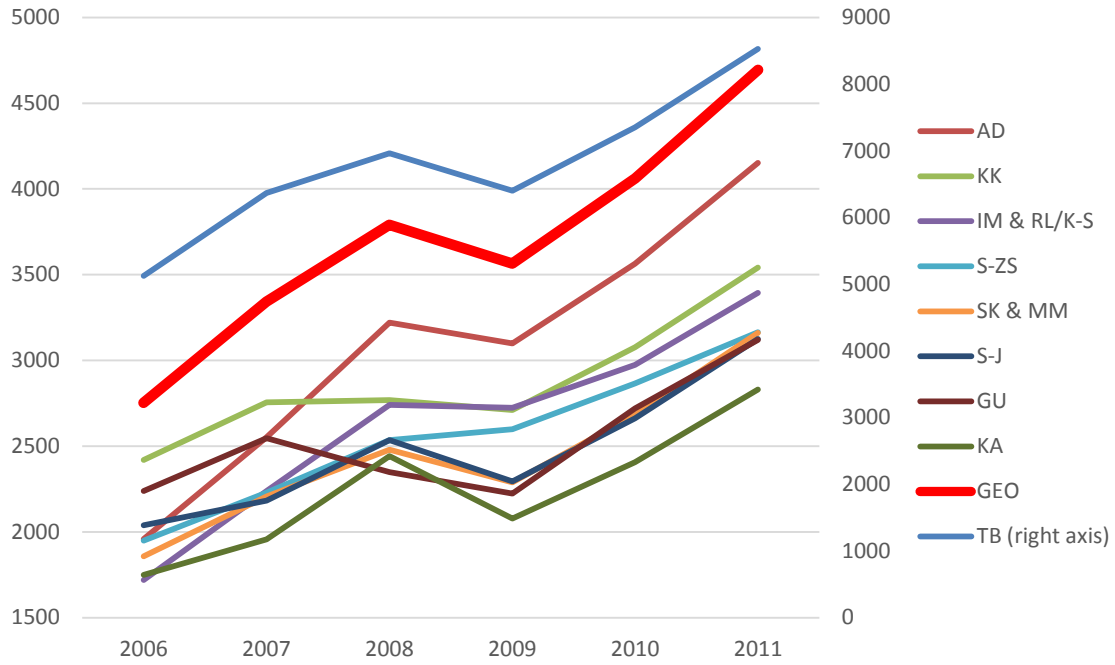


Source: Geostat webpage (2011)

Clearly, Tbilisi is the economic center of Georgia, with a disproportionate share of economic activity being located in the capital. No other region comes close, even those regions with large urban centers. At the same time, given the potential issues with calculating gross value added Tbilisi's share is likely to be slightly overstated – businesses active in the regions are often registered in the capital, and the price level is likely to be higher in Tbilisi than in the regions. Over the 2006 to 2011 time period the relative shares of regions remained relatively unchanged. The only exception is Adjara which in 2006 was responsible for six percent of total gross value added, while in 2011 it was responsible for eight percent, changing positions with, and being now ahead of Samegrelo and Zemo Svaneti.

Every region except Tbilisi is below the national average. The relatively more urbanized regions tend to have a higher, while relatively more rural regions tend to have lower per capita gross valued added. Overall, urbanization rates explain more than 93 percent of the variation in per capita gross value added, suggesting that there are little to no regional disparities, but rather, disparities between urban and rural areas. Over the years there have been few changes, with most regions growing on average at the same rate. Notable exceptions are Imereti/Racha Lekhumi and Kvemo Svaneti and Adjara, with above average growth rates of per capita gross value added. In particular Adjara had high sustained growth rates, with per capita gross value added growing from one of the lowest in Georgia to one of the highest in just five years. In fact, these high growth rates have one important implication for regional disparities. While in 2011 disparities between regions were mainly attributable to disparities between urban and rural areas the same was not true in 2006. This suggests that between 2006 and 2011 regional disparities have narrowed.

Figure 3.2. Per Capita GVA by Regions (in GEL) (Note: Per Capita GVA for Tbilisi is on the right axis)



Source: Geostat webpage (2011)

Economic Structure

The regions of Georgia differ in their economic structure. One can distinguish between three broad sectors, the primary sector (Agriculture, hunting and forestry, and fishing), the secondary sector (Industry, processing of products by households, and construction) or the tertiary sector (Trade and repairs, transport and communication, public administration, education, health and social work, other types of services). The gross value added of these sectors does not necessarily correspond to sectoral employement, as gross value added crucially depends on the price of final output and productivity. This in particular holds for the primary sector, with agriculture in Georgia absorbing a disproportionate share of employment, but having a relatively small share in gross value added.

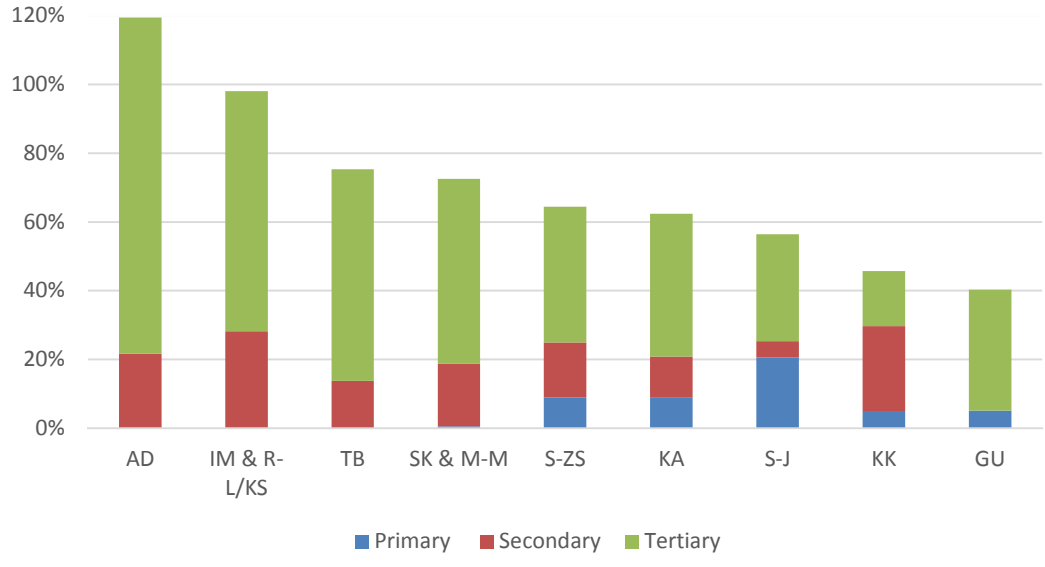
Tbilisi has no primary sector, a modest secondary sector share, and the largest tertiary sector share among all regions. Kvemo Kartli and Shida Kartli have a high share of the secondary sector, suggesting that while industries avoid Tbilisi itself close proximity to Tbilisi is valued. Other regions with significant shares of the secondary sector are Imereti/Racha-Lechkhumi and Kvemo Svaneti, Adjara, and Samegrelo and Zemo Svaneti, emphasizing the close relation between urbanization and the location of industries. Vice versa, more urbanized regions are also those with relatively small shares of the primary sector.

Figure 3.3. Sectoral shares of gross value added

Source: Geostat webpage (2011)

The primary sector decreased in importance in most regions. The share of secondary industries remained relatively constant over time, with the tertiary sector being the one that expanded in almost all regions. While regions differ in their economic structure there have been no fundamental shifts over the 2006 to 2011 time period. Exceptions are Samtskhe-Javakheti, where gross value added growth was mainly driven by the primary sector and Kvemo Kartli, where gross valued added growth was mainly driven by the secondary sector.

Figure 3.4. Sectoral contribution to regional gross value added growth (in percent)



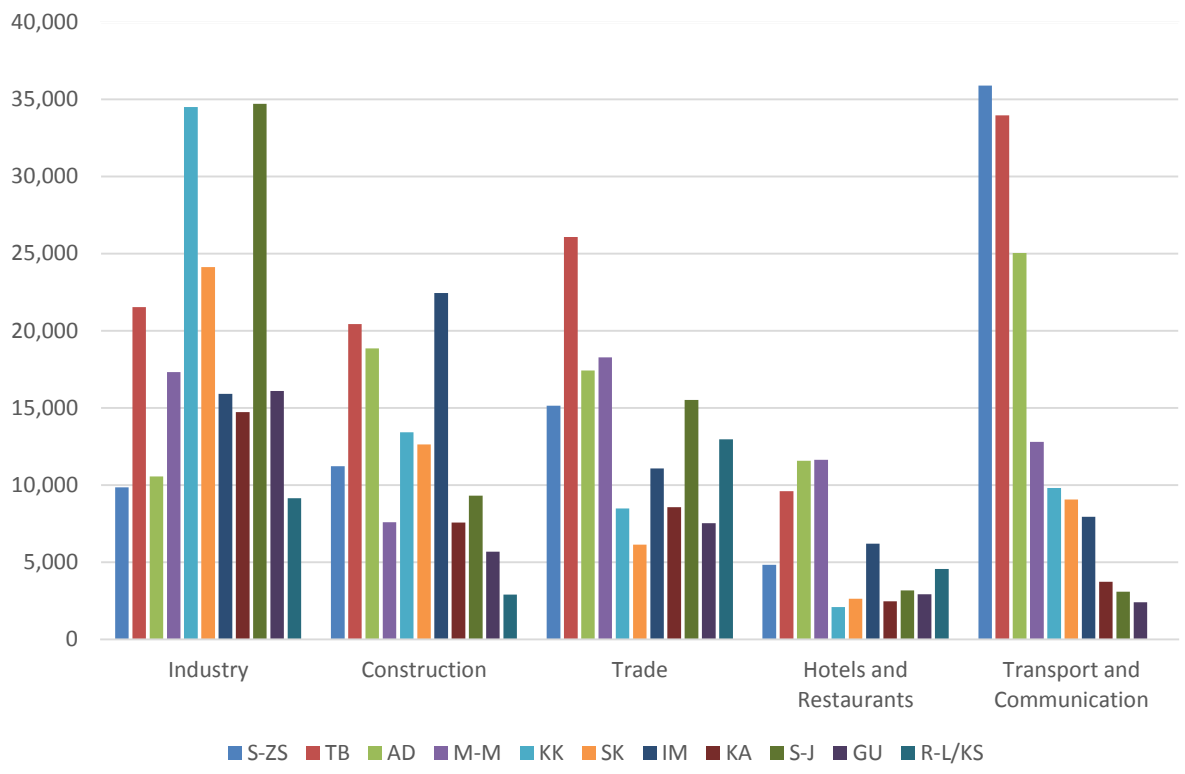
Source: Own Calculations, Geostat webpage (2011)

A finer partition of sectors, in particular the tertiary sector reveals specific regional patterns. Tbilisi has far larger tertiary sectors, and is more diversified than any other region of Georgia. Adjara has a strong presence of the construction sector, and to a lesser extent transport and communication, and public administration. Samegrelo and Zemo Svaneti has a strong presence of the transport and communication sector, likely to be related of the port of Poti. Imereti has a strong presence of public administration, education, and health services. None of these three regions for itself is well diversified; taken together they are.

Labor Productivity and Investment in Fixed Assets

Labor productivity can be measured as gross value added per employee. Differences in labor productivity across regions are a prime concern, as on average higher labor productivity translates into higher wages. At the same time measuring and comparing labor productivities is problematic: Differences in labor productivity differences are largely driven by differences in economic structure, with some sectors being inherently more productive than others. Given that Geostat reports gross value added, output, and employment only for broad sectors any labor productivity differences should be interpreted with caution.

Figure 3.5. Labor productivity by economic activity (Gross value added per employee)

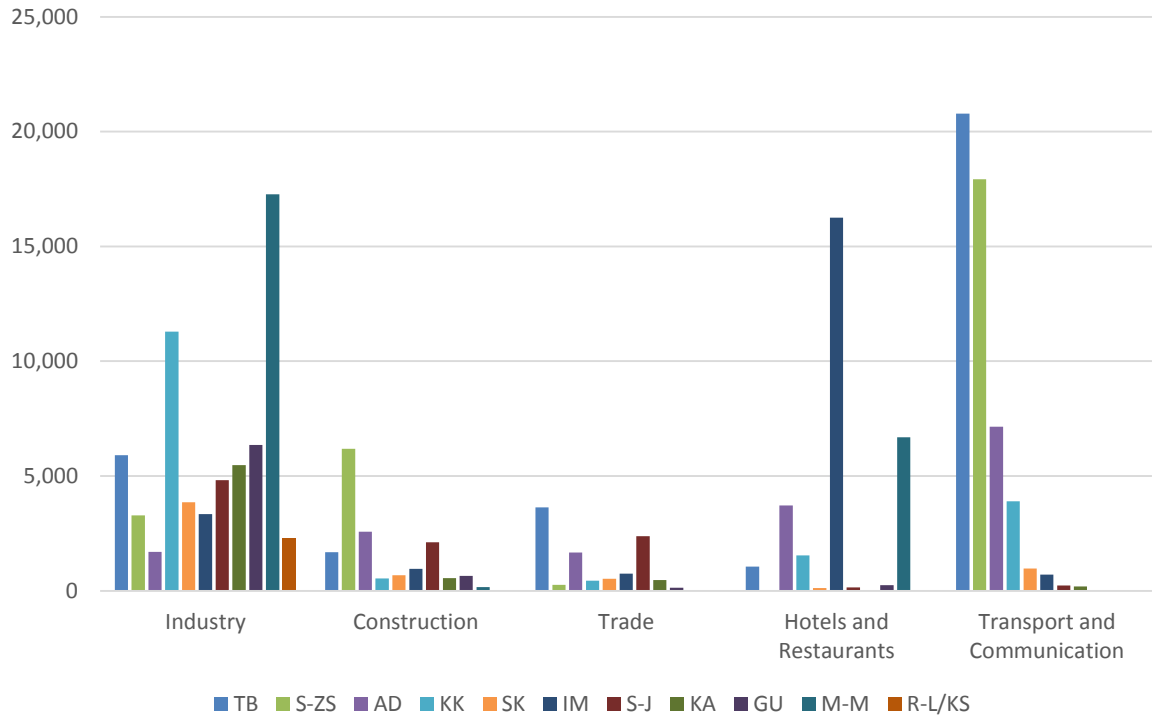


Source: Own calculations, Geostat webpage (2011)

There are large productivity differences across sectors and across regions. Notably there are large differences across regions in the transportation and communication sector. This potentially reflects the different nature of, for example, the transportation sector in Samegrelo and Zemo Svaneti, which includes the port of Poti and the Kulevi oil terminal, and the transportation sector in Samtskhe-Javakheti which encompasses mainly local road transportation. In general, Tbilisi seems to have a higher labor productivity in most sectors, but little to no apparent pattern exists for other regions.

One driver of productivity differences is capital per worker.[7] Indeed it appears that those regions with a higher productivity in a specific sector tend to have higher capital investment per employee: Tbilisi and Kvemo Kartli in industry, Adjara in construction, Adjara and Mtskheta-Mtianeti in hotels and restaurants; and Tbilisi and Samegrelo and Zemo Svaneti in transport and communication.

Figure 3.6. Investment in fixed assets by economic activity (in GEL, per employee)



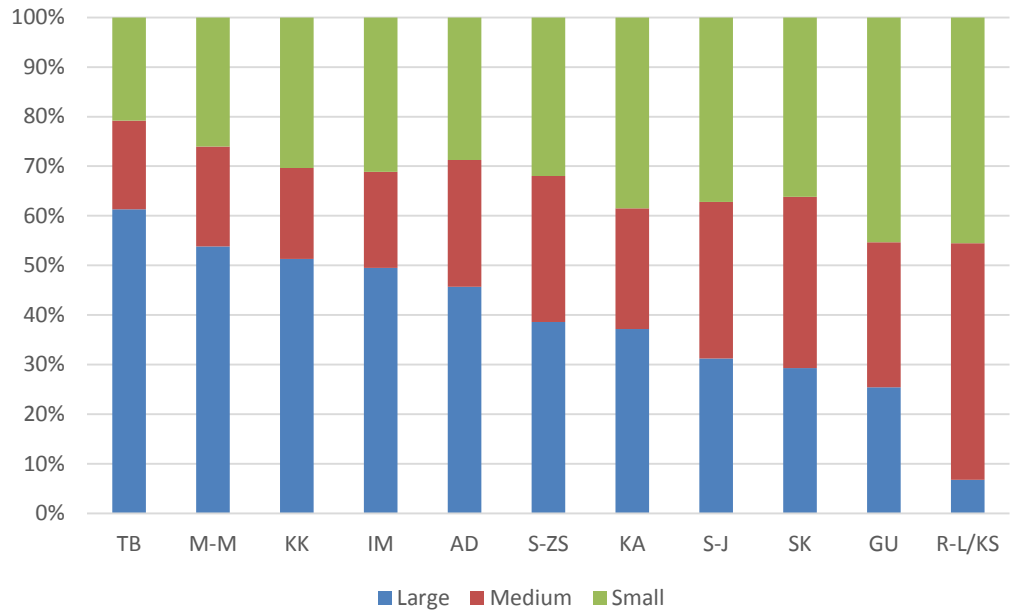
Source: Own calculations, Geostat webpage (2011)

Business Sector

According to the Geostat business survey around 45 percent of firms are registered in Tbilisi. The number of businesses registered in the regions is roughly proportional to these regions population share. In most regions small and medium sized firms employ the majority of workers, with Tbilisi and the surrounding regions Kvemo Kartli and Mtskhet-Mtianeti being the exception. In general, larger firms are dominant in relatively more urbanized regions, while smaller firms tend to dominate in relatively more rural regions. This is of concern as large firms tend to have higher labor productivity, as measured by gross value added per employee.

[7] At the same time productivity itself is a driver of capital investment.

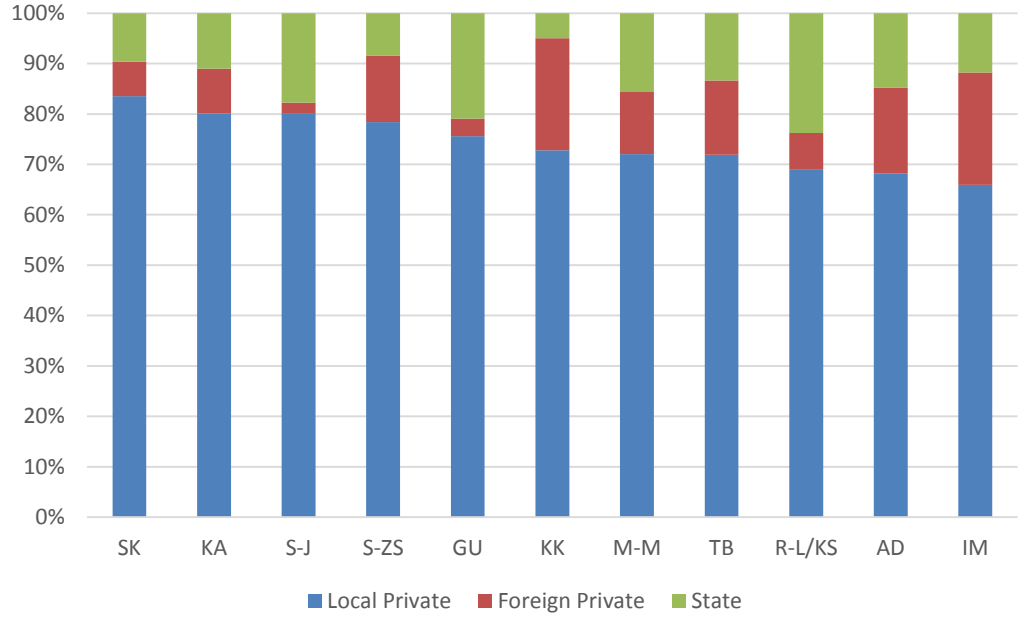
Figure 3.7. Size structure of firms by employment (in percent)



Source: Geostat webpage (2011)

Regional differences also exist in the ownership structure of businesses. If measured by gross value added, the majority of businesses in Kvemo Kartli, Imereti, and Samtskhe-Javakheti are foreign owned. In contrast, in Guria and Kakheti the majority of businesses are locally owned. This changes if measured by employment. Most dramatically, in Kvemo Kartli the share of foreign owned businesses of almost seventy percent of gross value added compares to only around fifteen percent of total employment. This suggests that foreign owned businesses are fundamentally different, with higher gross value added per employee.

Figure 3.8. Ownership structure by employment (in percent)



Source: Geostat webpage (2011)

Agriculture

Given the importance of agriculture for Georgia this section briefly summarizes differences in agriculture across regions. There are distinct regional production pattern, with regions specializing in the production of specific agricultural products. Of note are Kakheti being specialized in the production of wine, Samtskhe-Javakheti in potatoes, and Adjara in citrus fruits.

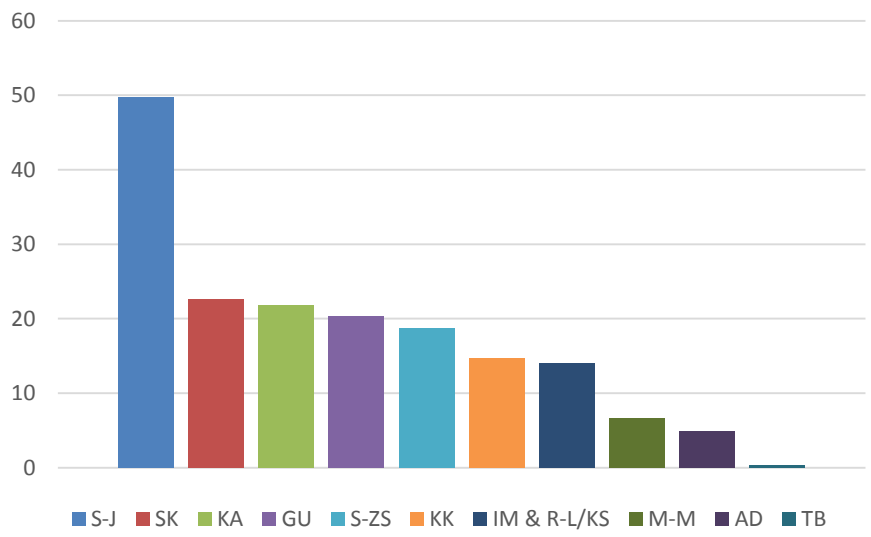
Table 3.9. Regional Shares in the Production of Selected Agricultural Products (in percentage, three largest shares)

	Percentage	Region	Percentage	Region	Percentage	Region
Wheat	49%	KA	25%	SK	18%	KK
Maize	25%	IM	25%	S-ZS	16%	KA
Potato	62%	S-J	22%	KK	3%	AD
Vegetables	25%	SK	22%	KK	13%	S-J
Fruit	33%	SK	18%	S-ZS	13%	KA
Apples	68%	SK	10%	S-J	4%	KK
Grapes	61%	KA	16%	IM	6%	SK
Citrus fruits	82%	AD	14%	GU	4%	S-ZS
Tea leaves	45%	S-ZS	24%	AD	24%	GU
Cattle	18%	IM	18%	S-ZS	15%	KK
Pigs	29%	S-ZS	19%	IM	15%	KA
Poultry	27%	KK	17%	IM	16%	KA

Source: Geostat webpage (2011)

An indication of the relative economic importance of agriculture in different regions is given by income data from the Integrated Household Survey. Income data derived from household surveys is problematic for various reasons, as discussed in detail in the chapter on Living Standards and Social Issues. But even with a cautious interpretation differences across regions remain. In particular, in Samtskhe-Javakheti household income from selling agricultural products is higher than in any other region. In contrast, income from selling agricultural products is lower in mountainous regions or the relatively more urbanized regions.

Figure 3.10. Per capita income from selling agricultural products (in GEL, monthly)



Source: Integrated Household Survey (2011)

Summary: While there are large differences in per capita gross valued added across regions, most of these differences appear to be driven by differences in urbanization rates. There are regional disparities in economic structure, with Tbilisi being the most diversified economy, and with the regions lagging behind to varying degrees. Firms in Tbilisi also appear to be larger and more productive than firms in the regions. A gap in the existing data is the absence of any data on interregional trade flows, making it hard to evaluate economic linkages between regions.

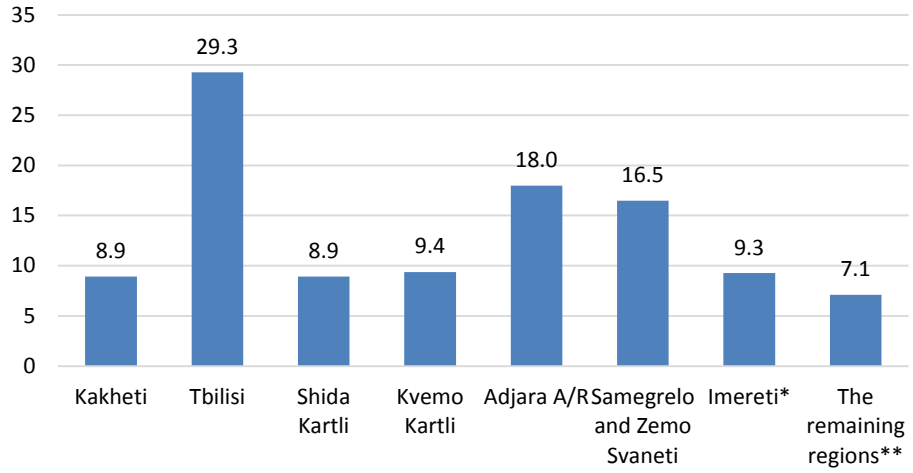
Employment and Education

Unemployment and Employment Rates

Following the ILO definition of unemployment Geostat defines a person as unemployed if he or she has not been in any domestic job for at least one hour during the last seven days, either salaried or otherwise compensated (in particular in kind), or with the intention of making a profit. An important consequence is that the large numbers of subsistence farmers in Georgia are counted as employed and are not appearing in the unemployment statistics.[8]

The unemployment rate is defined as the ratio of the number of unemployed to the total labor force. The employment rate is defined as the ratio of the employed to the total working age population. These two measures do not add up to one hundred percent, as the total working age population does not coincide with the total labor force. The latter, for example, does not include any discouraged workers that gave up on searching for employment. Thus in many ways the employment rate can be seen as a better measure of the strength of the labor market, and is better suited for cross-country or cross-regional comparisons.

Figure 4.1. Unemployment rate (in percent)



*Includes Racha-Lechkhumi and Kvemo-Svaneti

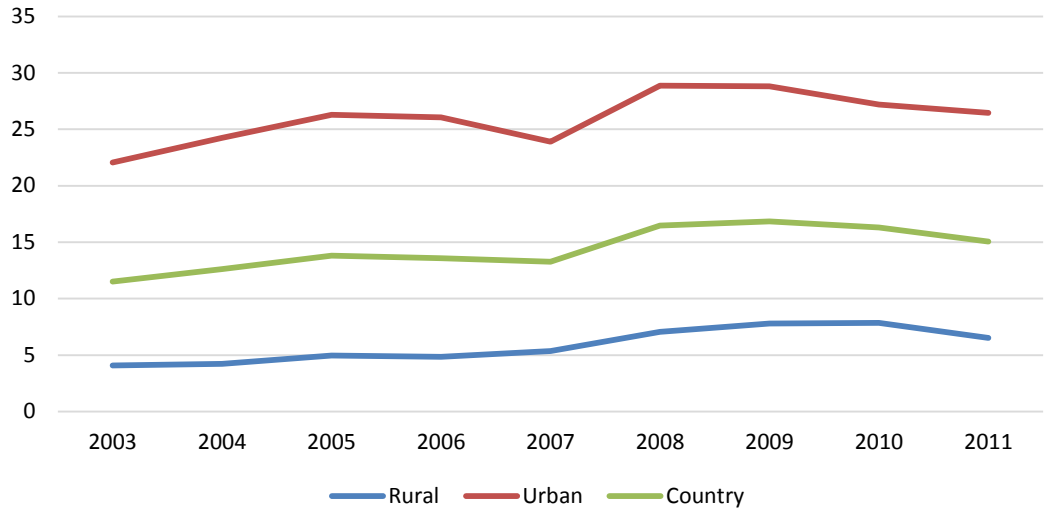
** Samtskhe-Javakheti, Guria, Mtskheta-Mtianeti

[8] This ILO definition of unemployment is adopted by most statistical agencies, including Eurostat. At the same time, Eurostat also reports underemployment (i.e. part time workers that would like to work more hours), job seekers that are not immediately available, and job seekers that do not actively search for a job (i.e. discouraged workers). Geostat also reporting these additional measures of unemployment would be of value.

Source: Geostat webpage (2011)

Unemployment figures show clear regional disparities, with unemployment being highest in Tbilisi, and to a lesser extent, in Adjara and Samegrelo and Zemo Svaneti. A potential explanation for the observed regional disparities are urbanization rates. Unemployment is much lower in rural than in urban areas, by almost twenty percentage points. Arguably this is a statistical artifact, as a large share of the rural employed are self-employed subsistence farmers who more accurately could be described as underemployed. There is no such outside option in urban areas, and with formal employment opportunities being relatively scarce the consequence is a high unemployment rate in urban areas.

Figure 4.2. Unemployment by Urban and Rural Areas (in percent)

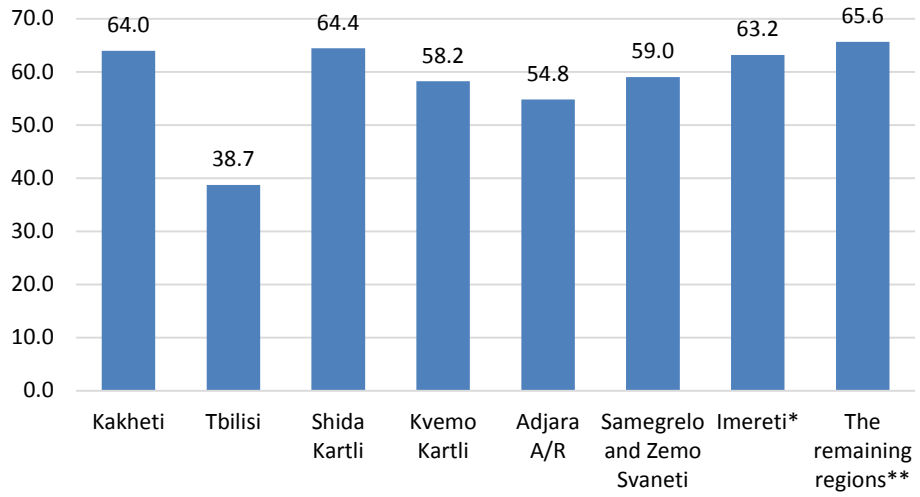


Source: Geostat webpage (2011)

Imereti (and Racha-Lechkhumi and Kvemo Svaneti) is the major exception to the rule that urbanization rates largely predict the regional unemployment rate. While the urbanization rate of Imereti is the second-highest after Tbilisi, unemployment is relatively low. In contrast, Adjara – with an urbanization rate almost as high as Imereti – has a much higher unemployment rate. A potential explanation can be found in the different economic structures of the two regions. While tourism and construction constitute a large part of Adjara's economy, Imereti is more industrialized. Jobs in tourism or construction are relatively short term (due to seasonal fluctuations) and low skilled. This should reduce the number of discouraged workers, as there is always a reasonable chance of finding employment, however short-lived it is. But this would tend to increase the unemployment rate, as it increases the size of the labor force, that is, those who actively search for jobs. In contrast, manufacturing jobs tend to be more long-term and high skill. This reduces the chance to find a job for any given jobseeker, thus increasing the number of discouraged workers. In turn, this reduction in the labor force reduces the unemployment rate.

While unemployment rates differ greatly across regions, the regional differences in employment rates are much less pronounced. The only marked exception is Tbilisi, which has a significantly lower employment rate than any other Georgian region. Across all other regions employment rates are broadly similar, with the few variations seemingly mirroring the urban or rural character of regions.

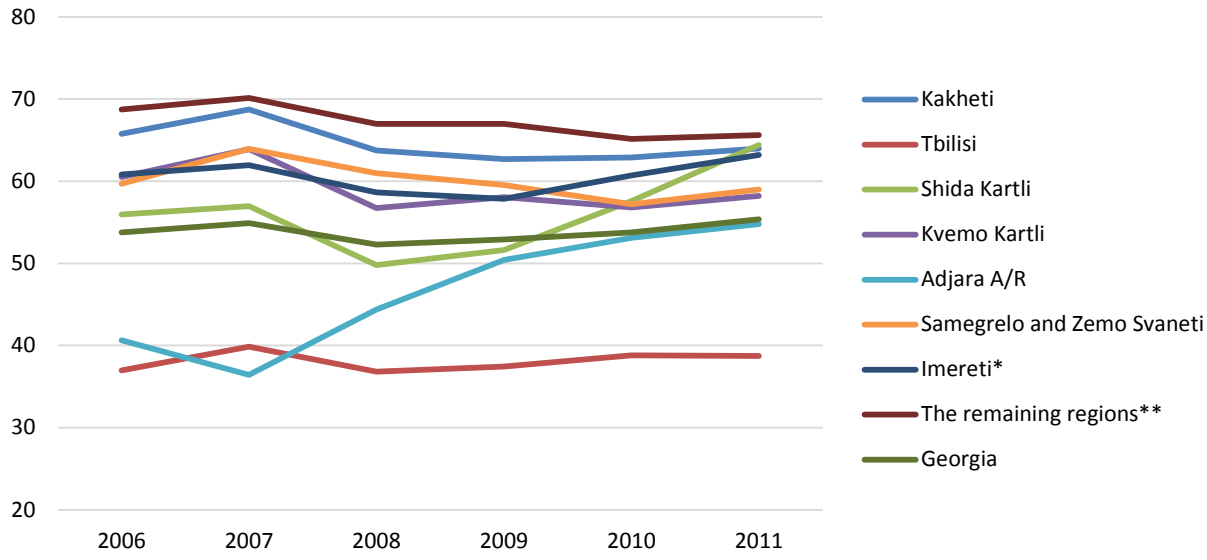
Figure 4.3. Employment rate (in percent)



*Includes Racha-Lechkhumi and Kvemo-Svaneti
** Samtskhe-Javakheti, Guria, Mtskheta-Mtianeti
Source: Geostat webpage (2011)

The dynamics of employment rates are broadly similar across regions. Employment rates fell in the aftermath of the August 2008 war and the global financial crisis, and since then have slightly recovered. The only exception to this broad pattern is Adjara, which experienced sustained increases in employment throughout the crisis. Potential explanations are developments in the tourism and construction sector, and the low level of employment from which Adjara started prior to 2008. The broader picture, excluding Adjara and Tbilisi, suggests that there are no large regional disparities. Employment rates are broadly similar across the regions of Georgia and exhibit a similar evolution over time.

Figure 4.4. Employment rate (in percent)

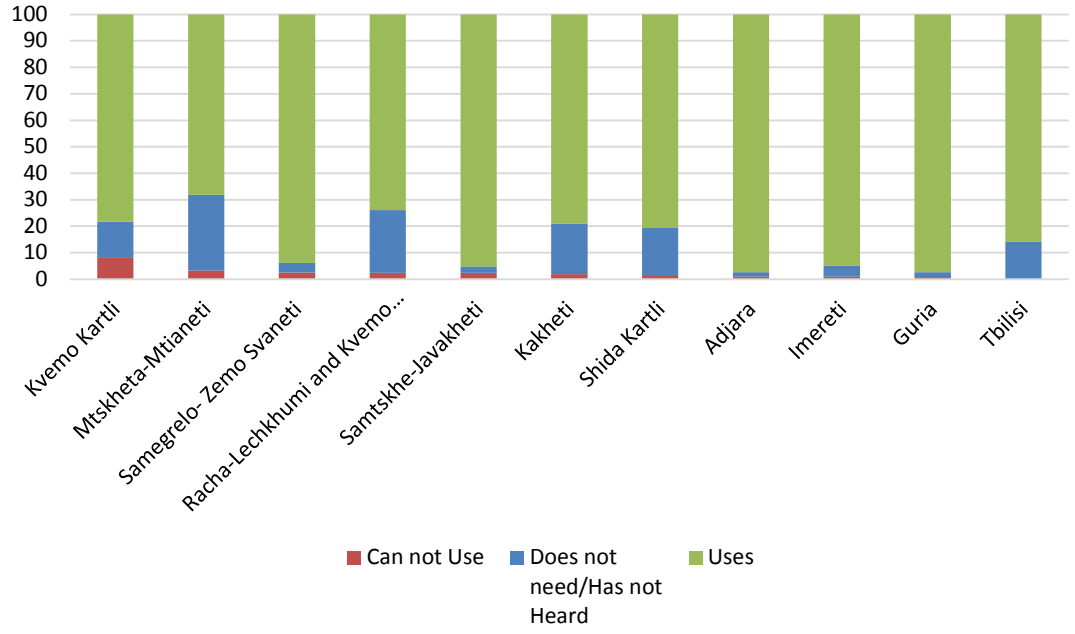


Source: Geostat webpage (2011)

Education and Human Capital

This section discusses differences and similarities in the access to educational institutions across regions. Geostat provides data on the number of pupils and the number of schools at the municipal level. A good predictor for the number of schools in a municipality is the number of pupils, and population density. In particular, less densely populated municipalities tend to have more schools, indicating that large cities and remote villages are served alike. To further assess the accessibility of schools the 2011 Village Infrastructure Census provides additional evidence from 2010. The Village Infrastructure Census covers 3529 villages, with each village represented by one interview. This small sample size in principle, but not necessarily in practice, should not pose any problems. Interview questions are specific to the village, and not the person interviewed.

Figure 4.5. Access to secondary education (in percent)



Source: Village Infrastructure Census (2011)

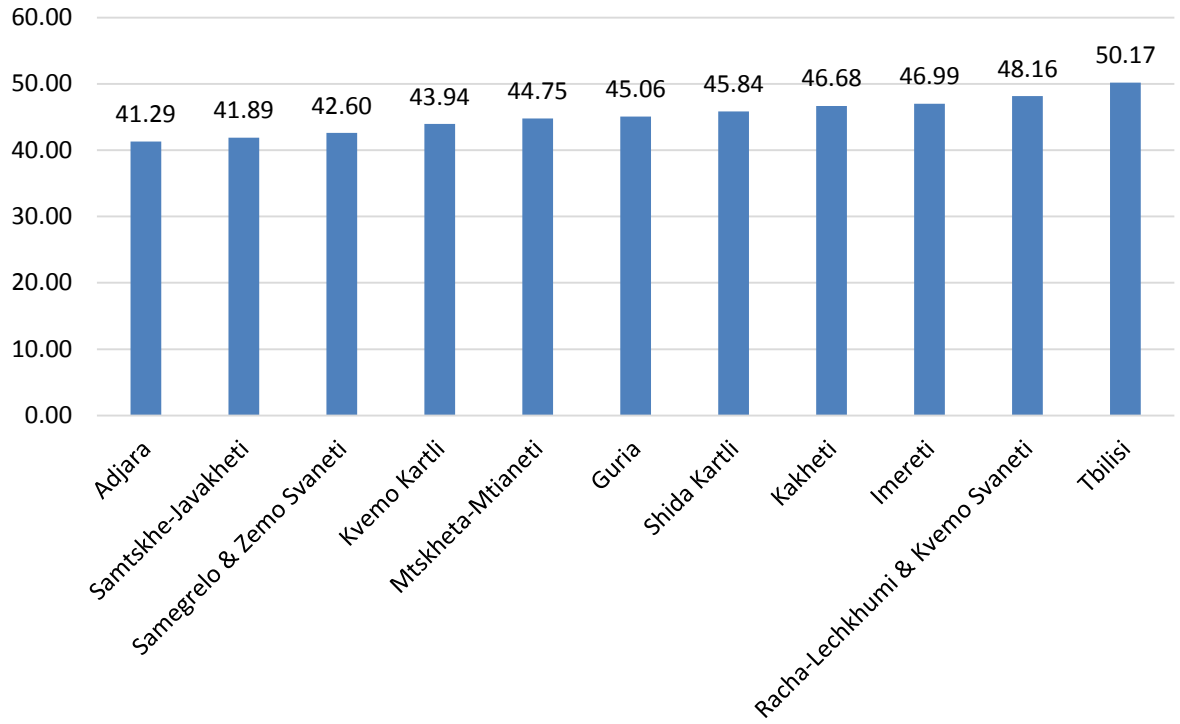
Access to primary and secondary schools seems to be good, with only 2.3 percent respectively 2.5 percent of villages reporting that they are unable to access primary respectively secondary schools.[9] Kvemo Kartli is an outlier, with 8.3 percent of villages in Kvemo Kartli reporting to be unable to access secondary schools. Other regions with below average access to schools are mountainous regions. With geographic barriers unlikely to be a problem in Kvemo Kartli, a possible explanation is the large share of ethnic Azeris in Kvemo Kartli. In contrast to Samtskhe-Javakheti the share of ethnic Azeris is not dominant, implying that the provision of schools is hindered by a fragmented population of different ethnicities.

Given that even in rural areas few villages report any problems in accessing primary or secondary education, the real problem might be the quality of the education provided.

[9] There is some confusion in the Village Infrastructure Census when it comes to distinguishing primary from secondary schools. Regardless of whether the census actually distinguishes between the two or not, percentages are very similar and very small, supporting the general argument that access to schools is relatively unproblematic.

Unfortunately quality of education is hard to define, let alone to accurately measure. A possible proxy of quality are potentially national exam scores. The national exam is a prerequisite to enter higher education institutions. National exam scores are thus not only a measure of the quality of schools, but also of the accessibility of higher education institutions to applicants from different regions. At the same time, national exam scores are also a very problematic measure, for various reasons. While a test taker's performance is to some extent indicative of the school's quality, the performance is also indicative of the test taker's innate ability, the individual test taker's preparation, or help received by parents or tutors. More importantly, the set of test taker's is not a random sample from a region's student pool. Rather, we would expect that only those take the national exam that have academic inclinations, or expect to do reasonably well in the exam. This self-selection process might be fundamentally different from region to region. In rural or mountainous areas few students might have academic inclinations, resulting in only the very best high school students taking the national exam. Or, in urban areas students are more aware of the difficulty of the national exam, resulting again in only the very best to take the exam. The exact self-selection process is unclear, with the only important implication that test results across regions should not be taken at face value.

Figure 4.6. General ability test (weighted average score)



Source: National Examinations Center (2012)

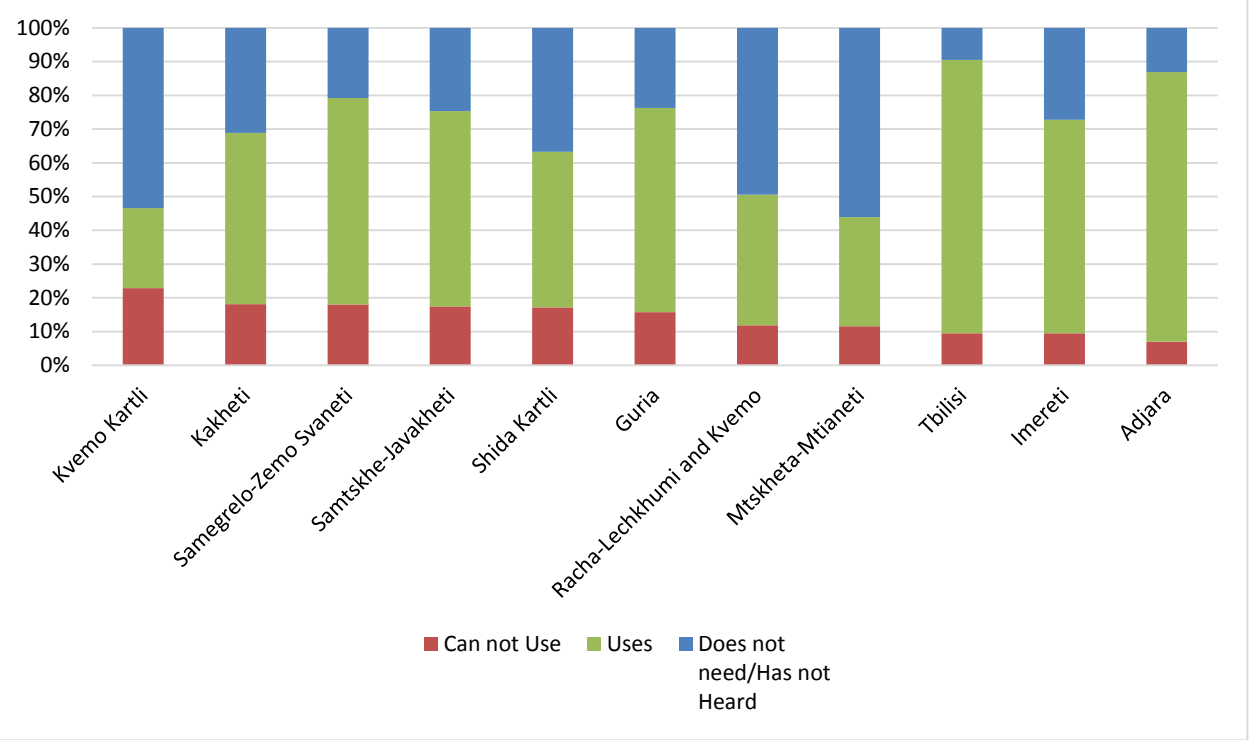
Comparing average scores in the general abilities test in 2012, shows that Tbilisi is ahead of any other region. This could indicate a higher quality of Tbilisi schools, or could be indicative of the factors mentioned above. There seems to be little relation to the usual characteristics of regions. Mountainous regions perform well in some cases, and not so well in others; urban regions perform well in some cases, and not so well in others.

The only robust pattern is that the two regions with large ethnic minority populations – Kvemo Kartli and Samtskhe-Javakheti – seem to perform less well than other regions. This seems to be

confirmed by the average scores in individual municipalities. In 2012 Ninotsminda, Marneuli, Akhalkalaki, and Tsalka were among the five municipalities with the lowest average test score in Georgia (ignoring test scores for the Gali municipality in Akbhazia). Whether this is a result of open discrimination, a lower quality of schools in these regions, language barriers, or a convoluted self-selection process is impossible to say. In particular, it is possible that the very best students shun the Georgian national exam, and instead receive their education in Armenia and Azerbaijan, respectively. Regardless of what explains these findings, the low scores in the national exam reduce the number of students from these municipalities going to the very best Georgian higher education institutions.

An alternative to higher education is vocational training. According to Geowel Research (2010) in 2009/10 only 11,995 student were accepted into vocational training programs, compared to 30,189 students admitted into higher education institutions. The Village Infrastructure Census provides some information on the accessibility of vocational training institutions to villages in the various regions. Vocational training institutions are either unknown or unneeded, or impossible to access in a significant share of villages. Regional disparities are pronounced, with more urban regions tending to have less accessibility problems.

Figure 4.7. Access to vocational education institutions (in percent)



Source: Village Infrastructure Census (2011)

Summary: Regional disparities in unemployment are mainly driven by the urban or rural character of regions, with relatively more urbanized regions tending to have higher unemployment rates. At the same time, relatively low unemployment rates in more rural areas are likely reflecting a large share of self-employed subsistence farmers. The extent of subsistence farming is hard to establish given the available data, suggesting a need for more data on employment and economic activity. Access to at least primary and secondary education appears to be reasonably close to universal. Access to higher education seems to be more limited, given large differences in national exam scores, with Tbilisi ahead of the regions, and those regions with large ethnic minorities lagging further behind.

Living Standards and Social Issues

Household Income

Comparing income level across regions is not straightforward for two reasons. First, with price differences across regions real incomes might vary, even if nominal income levels are similar. For Georgia this is less of a concern. Interregional price level differences are usually driven by differences in land prices. With most Georgian households owning their dwelling, the cost of housing is a minor category in the consumer price index. In contrast, important categories in the consumer price index are food and to a lesser extent energy and transportation. Prices in these categories tend to be relatively uniform across Georgia, given that they are tradeable across regions.

The second concern is the quality of the available data. Income and expenditure data is derived from the household survey, relying on households to truthfully report their income and expenditures. More so than with other survey categories misreporting, and here in particular underreporting is likely, potentially compromising the quality of the data.[10] This is a problem if underreporting is more common in some regions than in others, due to different economic structures, or due to different cultural values. Testing for Benford's law – the fact that digits in most sources of data follow a specific distribution – allows to assess whether income is reportedly with different accuracy in different regions. Of note here is that most income categories are seemingly reported accurately, as they conform to Benford's law. An exception are pensions and scholarships, a category which on theoretical grounds we would not expect to follow Benford's law. The other exception is income derived from selling agricultural products, a category which we would expect to follow Benford's law. While in some regions – Shida Kartli, Kvemo Kartli, Samtskhe-Javakheti and Imereti – income in this category appears to be accurately reported, the same does not hold for other regions – Kakheti, Adjara, Guria, Samegrelo and Zemo Zvaneti, and Mtskheta-Mtianeti. While this is far from being conclusive evidence, it suggests that all observed income levels and differences should be interpreted very carefully.

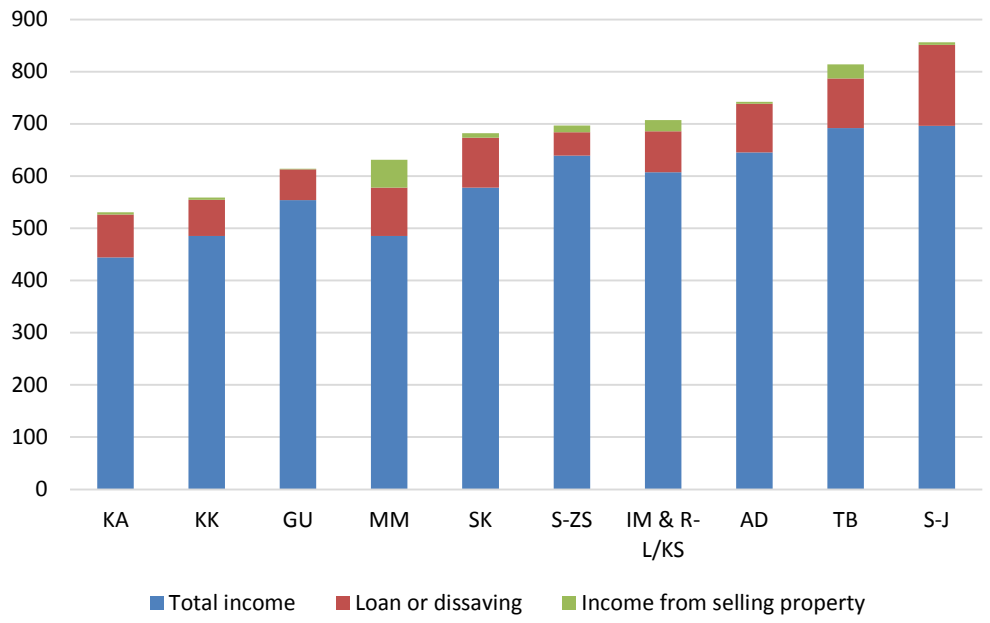
Based on the Integrated Household Survey income figures can be computed as both average monthly household income and average monthly per capita income. These two figures are not entirely comparable, as household sizes differ across regions. In particular, households are significantly larger in Adjara or Samtskhe-Javakheti. Neither measure is preferable on theoretical grounds, as household size is potentially endogenous and depended on income levels. Nevertheless, whether reported at the level of the household or the per capita level,

[10] See Hurst, Li, and Pugsley (2012).

regions rank very similarly. The only exception is Adjara, which has the third-highest per household income, but only the eighth-highest per capita income.

Regional average per capita incomes are within a 20 percent band around the average national per capita income. It should be noted that within regions across household variability of per capita incomes far exceeds cross regional variability. This has the implication that while the differences appear to be large, few are statistically significant.[11] In particular, assuming a 95 percent significance level average per capita income in Kakheti, Kvemo Kartli, Mtskheta-Mtianeti, and Guria is lower than in the other regions. Vice versa, average per capita income in Tbilisi appears to be significantly above the average per capita income in every region except Adjara, Imereti, and Samtskhe-Javakheti. This seems to suggest that relatively more urbanized regions have higher per capita incomes. The two exceptions are Kvemo Kartli and Samtskhe-Javakheti, coincidentally or not the two only regions with large shares of ethnic minorities.

Figure 5.1. Average monthly per capita income and cash flows (in GEL)

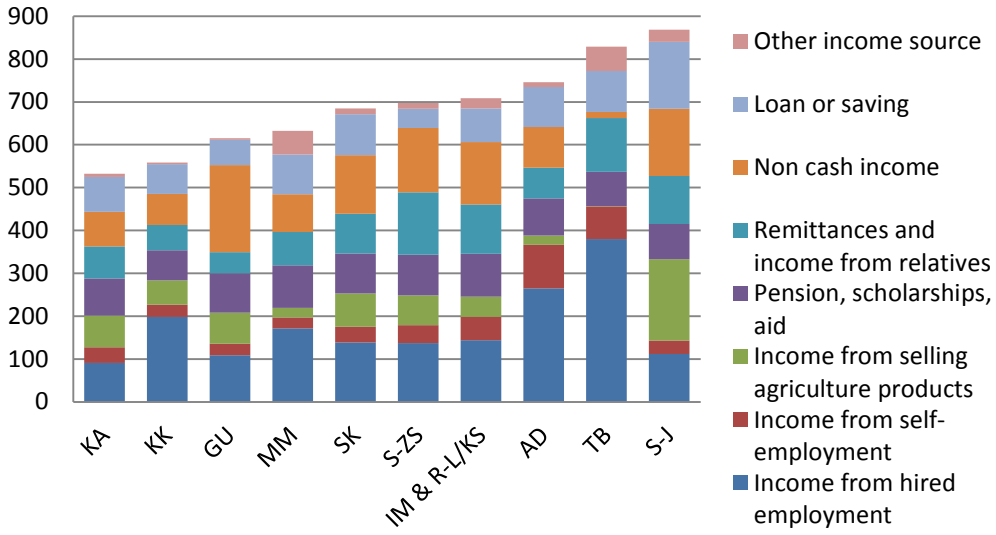


Source: Own calculations, Integrated Household Survey (2011)

Decomposing income and cash-flows into its various sources also shows large differences across regions. In relatively more urbanized regions, in particular Tbilisi, a large part of income is income from hired employment. In relatively more rural regions a large part of income is derived from selling agricultural products or is non-cash income. Households in Samtskhe-Javakheti stand out by having a larger income from selling agricultural products and larger cash flows from loans than households in any other region of Georgia.

[11] As indicated by a rule of thumb calculation of the standard deviation of the sample averages. A more accurate and robust calculation would be possible, but is beyond the scope of this report.

Figure 5.2. Sources of income and cash-flows (in GEL, per household)



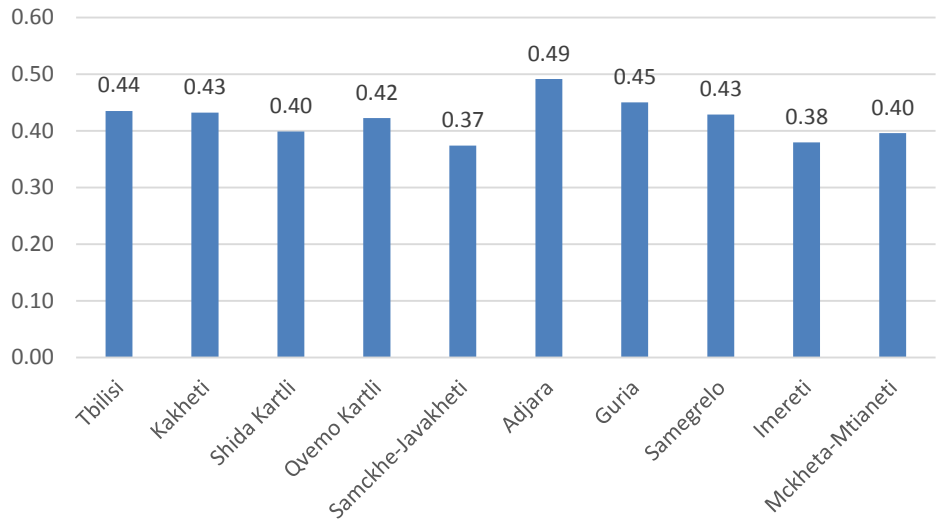
Source: Own calculations, Integrated Household Survey (2011)

Inequality and Poverty

Income inequality can be measured by the Gini coefficient, with a Gini coefficient of zero indicating complete equality and a Gini coefficient of one indicating complete inequality. The Gini coefficient as a measure of income inequality faces the same problems discussed in the previous section. With a large variability of household income even seemingly large differences in the Gini coefficient do not necessarily reflect statistically significant differences across regions.[12] For households in cities the Gini coefficient is 0.47, while for households in rural areas the Gini coefficient is 0.42. Given the large sample size if households are distinguished by only urban and rural areas, as opposed to ten to eleven regions, this difference is likely to be statistically significant. Across regions the Gini coefficient shows considerable variation, even if it is unclear whether these differences are statistically significant. Adjara and Mtskheta-Mtianeti appear to be the most unequal regions, while Samtskhe-Javakheti and Imereti appear to be the most equal.

[12] Unfortunately computing standard deviations for the sample Gini coefficients – as opposed to the sample mean - is not straightforward, and beyond the scope of this report.

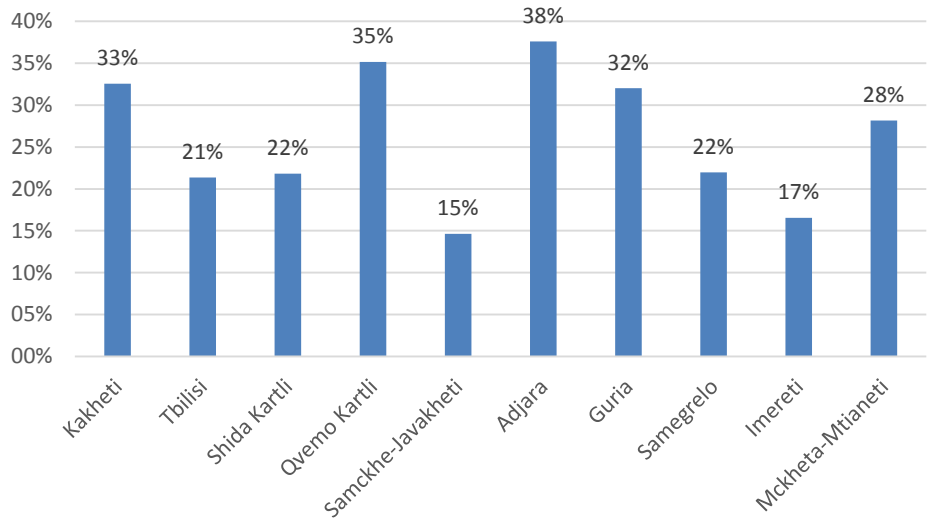
Figure 5.3. Gini coefficient



Source: Own calculations, Integrated Household Survey (2011)

The share of the population below 60 percent of the Georgian median income is an alternative measure of income inequality, and more importantly an indicator for the incidence of poverty. Once again statistical significance is a concern. Poverty appears to be the most severe in Adjara and Kvemo Kartli. In contrast, the incidence of poverty is relatively benign in Imereti and Samtskhe-Javakheti. Note that these differences in poverty incidence are to a large extent driven by differences in average income across regions.

Figure 5.4. Population below sixty percent of the national median income (in percent)



Source: Own calculations, Integrated Household Survey (2011)

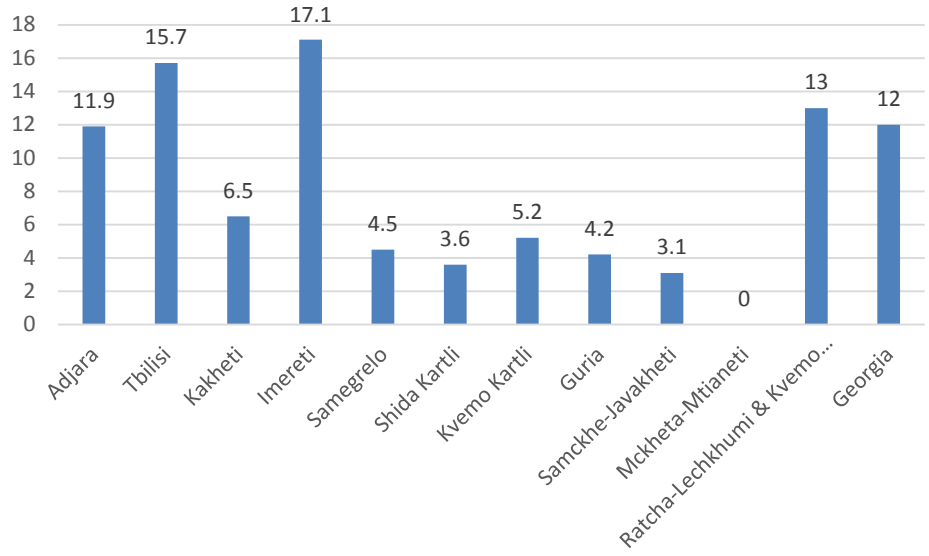
Health and Mortality

Geostat provides various statistics on the number of hospitals, hospital stays, and physician in the regions of Georgia. These statistics mainly reveal than that relatively more urbanized regions, and in particular Tbilisi, are better served than relatively more rural regions. While the

data is silent about the quality of health care, it is likely that in quality adjusted terms these disparities are larger.

Striking regional disparities exist in the incidence of child mortality. Child mortality rates are higher in relatively more urbanized regions. Air pollution or socio-economic deprivation in urban areas are possible explanations. Racha-Lechkhumi and Kvemo Svaneti is a notable exception, but given the large variability of data for this region between 2005 and 2009, this appears to be more of a data issue than a real finding.

Figure 5.5. Under-five mortality rate (per 1000 live births)



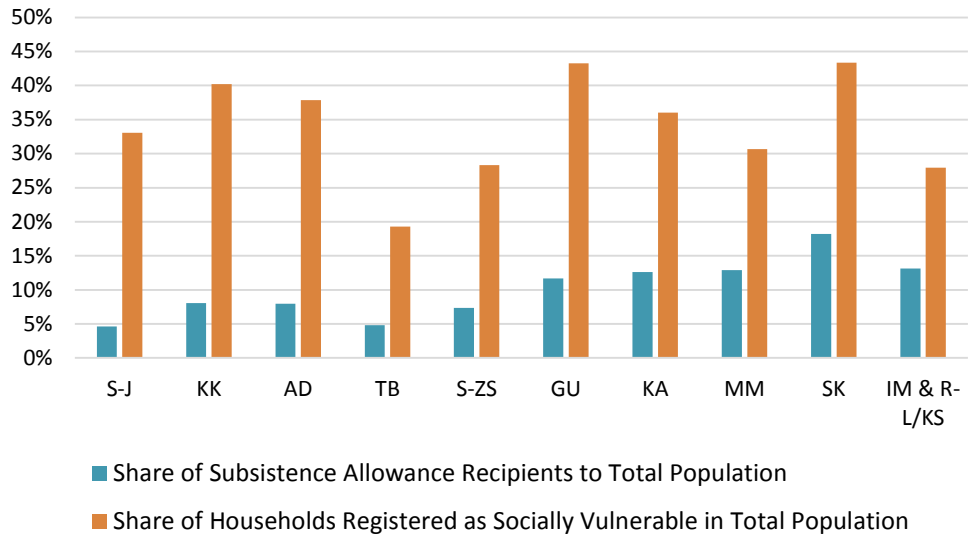
Source: National Center for Disease Control and Public Health (2011)

Social Welfare

The government maintains several welfare programs, of which subsistence allowance is the most significant. A database of socially vulnerable households is maintained, and social assistance is provided to the most vulnerable households in this database. Two different figures can be compared. The share of households registered as socially vulnerable in the total population gives a very rough indication of the incidence of social vulnerability.[13] The share of households receiving subsistence allowance gives an indication of the extent of extreme social vulnerability.

[13] The share is somewhat misleading as it mixes households with total population, of concern if regions with a large average household size are compared to regions with a small average household size.

Figure 5.6. Share of subsistence allowance recipients and vulnerable households (in percent)



Source: Social Service Agency (2011)

There are clear differences across regions. Tbilisi and Samtskhe-Javakheti appear to have the lowest share of socially vulnerable households, while Shida Kartli has the highest share. Possible explanations are income differences, the share of internally displaced persons, and the share of ethnic minorities. Samtskhe-Javakheti is a case in point. With relatively high reported average income in the household survey the share of subsistence allowance recipients or the share of socially vulnerable households should be relatively low. At the same time, as suggested by World Bank (2013) the large share of ethnic Armenian is an alternative explanation. While it might be that ethnic minorities have less access to government programs, the relatively large share of households registered as socially vulnerable seems to indicate otherwise.

Summary: Income differences between regions are small compared to income differences across households within regions, making any robust inference about interregional differences problematic. If the data is taken at face value regional disparities in income, inequality, and the incidence of poverty exist, even after controlling for the urban or rural character of a region. Tbilisi, Samtskhe-Javakheti, and Imereti appear to have the highest incomes and the lowest incidence of poverty. Kakheti, Kvemo Kartli, and Adjara appear to have the lowest per capita incomes and the highest incidence of poverty. Given the outdated sample frame, the small sample size, and the usual issues with accurate income reporting in household surveys, all this has to be interpreted with caution.

Infrastructure

Road Infrastructure

Measuring the quantity and quality of road infrastructure in regions or municipalities is inherently difficult. World Bank (2013) provides some measures for selected cities, in particular distance to Tbilisi, distance to the four largest cities of Georgia, distance to the East-West Highway, distance to ports, and a combination of these measures. Combining these measures implies that Samtskhe-Javakheti and Kakheti are the most poorly located regions. Nevertheless, these are only very rough measures of the accessibility of a region. As is noted in the World Bank study straight distances to major population centers or the East-West highway do not

necessarily correspond to real travel time. Thus an appropriate measure of accessibility should take into account the actual road infrastructure, both length and quality, and should appropriately aggregate across a municipality or region. But even such a measure could not account for reverse causality, that is, the fact that the economic geography of a country is both the cause and the consequence of the existing infrastructure.

Crude measures of the provision of road infrastructure in a region are road length per square kilometer, and road length per 1000 persons. As the length of the road network is largely determined by geography, and as length is not adjusted for quality, these measures give little indication of possible regional disparities. While data on the type of road surface exists at the Ministry of Regional Development and Infrastructure, this data does not allow the construction of a quality-adjusted road index, given the wide variability of quality even among roads that nominally have the same surface.

In the absence of objective data on road quality, such as the International Roughness Index, only subjective data from household and settlement surveys can be used. The Millenium Challenge Corporation Survey includes several questions on road quality and usability. While this allows to evaluate the actual quality and usability of roads, the use of survey data introduces additional problems. Most importantly, this survey only includes one respondent per settlement, potentially introducing subjectivity and limited comparability across settlements.

Table 6.1. Surface cover of the road leading to settlement (in percent of settlements covered by the survey)

	AD	GU	IM	KA	M-M	R-S/KS	S-ZS	S-J	KK	SK
Asphalt Road	21.9	58.4	19.2	47.4	6.7	23.0	12.5	14.7	30.0	33.0
Asphalt and Gravel Road	17.0	16.8	40.2	40.7	18.1	6.6	63.4	19.2	17.8	9.1
Concrete and/or Gravel Road	7.6			1.1	0.2					
Gravel Road	9.6	6.3	19.4	0.9	44.6	9.0	10.0	20.3	2.2	26.3
Gravel and Dirt Road	26.5	18.5	20.1	9.5	9.0	56.3	14.1	20.4	27.5	29.2
Dirt Road	17.3			0.4	17.0	5.1		7.6	14.7	
Dirt Road and/or Pathways			1.0					10.1	3.7	2.3
Pathways					4.3			7.8		

Source: Own calculations, Millenium Challenge Corporation Survey (2010)

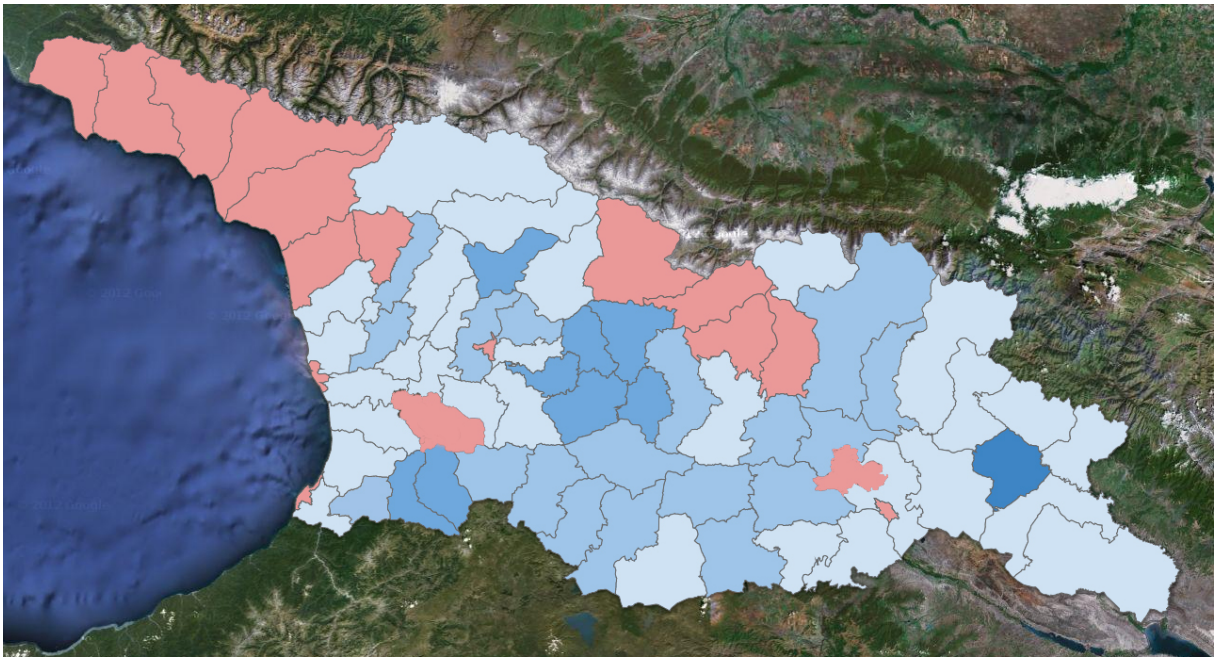
It has to be emphasized that there is no adjustment for the population size of settlements. Combined with the fact that the survey leaves out the largest cities (Tbilisi, Kutaisi, Batumi, Rustavi, and Poti), these percentages should not be interpreted as percentage of the total population served by a particular type of road. Nevertheless, even with these caveats it appears that overall the road infrastructure in Georgia is poor, with the majority of settlements not being served by asphalted roads.

Given that the percentages are not adjusted for the population size of settlements, the level of urbanization in a region has little to no consequence. Given this the main pattern is that mountainous regions tend to have worse roads. Samtskhe-Javakheti stands out as a region that has a large share of settlements not served by motorable roads, despite being largely located on

a high plateau with little rugged terrain. Kvemo Kartli stands out as a region that has a large share of dirt and mixed dirt/gravel roads, despite not being a mountainous region. [14]

A different measure of road infrastructure is the usability of roads in different seasons, in different weather, and by different types of transport. The Millenium Challenge Corporation Survey includes self-reported assessments of whether roads leading to a settlement are usable in both summer and winter, in both dry and rainy weather, and by both heavy and light transport.

Figure 6.2. Usability of roads



red: no data

light blue: usable year round in all kind of weather by all types of transport

dark blue: usable only in summer and/or dry weather and/or by heavy transport

Source: Own calculations, Millenium Challenge Corporation Survey (2010)

The pattern broadly corresponds to road surface covers reported in the same survey. Mountainous municipalities with the major exception of Zemo Svaneti tend to have more problematic roads. The Gurjaani municipality stands out as seemingly having the worst roads in Georgia, but this result is largely driven by two villages reporting, possibly erroneously, complete inaccessibility. Various municipalities in Imereti also report difficult road conditions. While these regions are mountainous, their terrain is hardly comparable to the high mountain terrain of other municipalities, with reportedly better road conditions.

An interpretation of these various and sometime conflicting findings is difficult. On one side these findings could reflect the true state of the road infrastructure. On the other side some of the findings serve as a reminder of the difficulty of appropriately aggregating across diverse

[14] It cannot be ruled out that this is related to the Millenium Challenge Corporation Survey oversampling both Samtskhe-Javakheti and Kvemo Kartli, given the interest in evaluating the impact of the new Javakheti highway.

settlements within a municipality, and a reminder of that the data is self-reported and subjective.

Other Transportation Infrastructure

Georgian Railway is the only railway provider in Georgia. The total length of the Georgian railway network is 2,344 km, of which only 1326 km are operational (Georgian Railway, 2013). The railway network is unevenly distributed, with the network mainly connecting the main urban centers. Compared to roads it is also insignificant for passenger transportation, as is indicated by that less than 1 percent of passengers choose the railway. The railway network is of more importance for cargo, with more than 41 percent of cargo transported by rail (Geostat, 2012).

The Village Infrastructure Census provides some evidence on the accessibility and the use of railway infrastructure. There appear to be large regional disparities, with some regions reporting an almost universal usage of railway service. Other regions – predominantly mountainous – report the opposite. Of note is Kakheti, which in principle should have good access to the railway network given the relative lack of geographic barriers. Around 80 percent of villages not having access to the railway network report that distance to the railway network is the main reason for inaccessibility.

Table 6.3. Use of railway stations by villagers in regions (in percent)

	Does not need/Has not heard	Cannot use	Uses
TB	14.3	0.0	85.7
AD	2.6	0.9	96.5
GU	1.6	5.3	93.2
IM	9.6	3.9	86.5
KA	52.8	31.4	15.9
M-M	71.8	3.9	24.4
R-L/KS	46.6	37.2	16.2
S-ZS	3.4	1.3	95.4
S-J	8.4	8.0	83.7
KK	56.0	19.7	24.3
SK	25.0	4.8	70.2

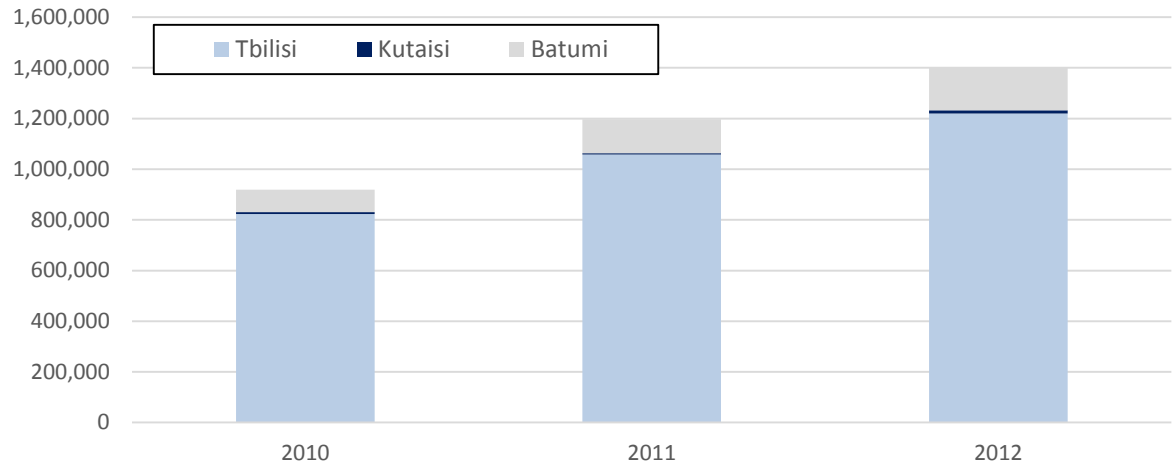
Source: Village Infrastructure Census (2011)

There are 4 operational ports in Georgia: Poti and the Kulevi oil terminal in Samegrelo and Zvemo Svaneti, Batumi in Adjara, and the Supsa oil terminal in Guria. Little data exists that would allow to evaluate the impact of the existing port infrastructure on their respective regions, let alone other regions in Georgia. An exception are regional gross value added statistics, which indicate that at least for their home regions these ports are of importance. With shares of 16.9 percent respectively 6.8 percent of gross valued added the transportation and communication sectors of Samegrelo and Zemo Svaneti, respectively Adjara, have the second respectively third highest shares in regional gross value added, among all regions.

Currently three international and one domestic airport are operating in Georgia. As to be expected Tbilisi International Airport is by far the busiest, accounting for 87 percent of all passengers and serving far more international and domestic destinations than any other airport. Batumi with twelve percent and Kutaisi with one percent of all passengers come as second

respectively third. These differences in air connections are even more pronounced when it comes to cargo operations, with Tbilisi accounting for more than 98 percent of all air cargo, according to the Georgian Civil Aviation Agency (2012). While these are large disparities it is worth pointing out that they are not unusual for small countries such as Georgia, with most countries of this size being served by only one major international airport.

Figure 6.4. Passenger numbers

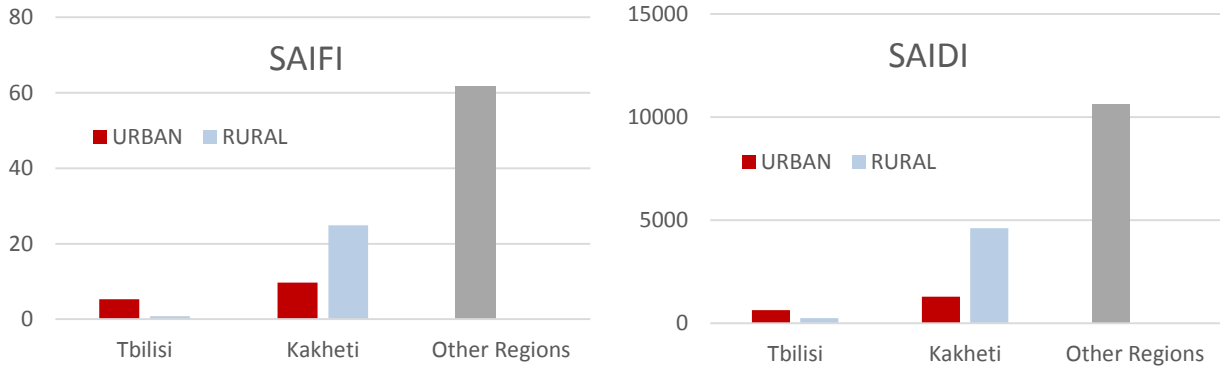


Source: Georgian Civil Aviation Agency (2012)

Electricity Infrastructure

Reforms since the Rose revolution have significantly improved the availability and quality of the electricity supply. In 2011 almost all household had access to electricity, with virtually no differences between regions. While access to electricity is almost universal the quality of the electricity supplied varies across regions. The quality of the electricity supply can be measured by the System Average Interruption Frequency Index (SAIFI), which is the average number of interruptions that a customer would experience, and the System Average Interruption Duration Index (SAIDI), which is the average duration (in hours) of outages for each customer. Evidently regional disparities exist, in particular between urban and rural areas, and Tbilisi and the rest of Georgia.

Figure 6.5. Quality of electricity supply



Source: Georgian National Energy and Water Supply Regulatory Commission (2011)

Water Infrastructure

Only about fifty percent of households have access to drinking water in their dwelling, with the remainder relying on water taps or a well in the yard or in close proximity to the dwelling.

Tbilisi and the relatively more urbanized regions tend to have better access to drinking water, with the notable exception of Samegrelo and Zvemo Svaneti. While a relatively urbanized region, most households have neither water taps within the dwelling or in the yard, but rather rely on wells.

Table 6.6. Supply sources of drinking water (in percent)

	The water supply system installed in the dwelling	The water system tap in the yard or in the vicinity	The well in the yard or in the vicinity	Natural spring in the yard or in the vicinity	Other sources
KA	16.6	66.6	6.5	9.7	0.5
TB	95.9	3.3	0.1	0.4	0.3
SK	25.7	35.1	28.1	11.2	0.0
KK	37.1	42.9	14.1	4.5	1.4
S-J	31.7	60.6	7.6	0.0	0.0
S-ZS	21.8	9.0	66.7	2.5	0.0
IM	31.8	19.8	34.6	13.7	0.0
Other*	60.6	22.5	8.2	7.6	1.1
GEO	**50.6**	**24.4**	**18.4**	**6.1**	**0.4**

* Includes Adjara, Guria and Mtskheta-Mtianeti regions

Source: Geostat webpage (2011)

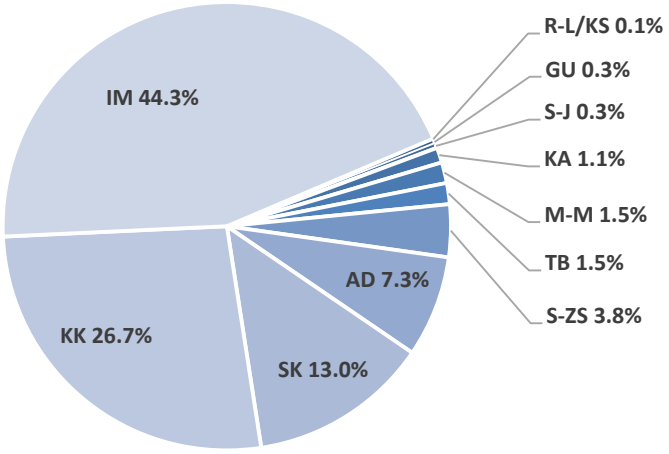
Summary: Data on infrastructure is incomplete and incoherent, and if derived from household or settlement surveys is of subjective nature. What data exists suggests that there are large disparities in infrastructure, mainly between urban and rural areas, and between Tbilisi and other urban areas. Of note is the poor state of road infrastructure, with the majority of settlements not being served by asphalted roads, even in regions with mostly non-mountainous terrain. With the various household and settlement surveys covering various dimensions of infrastructure, data availability on infrastructure could be improved by coding data not just by region, but also by municipality. Furthermore, greater efforts should be made to collect objectives measures of infrastructure.

The Environment

Air Pollution

The main sources of air pollution are heavy industries, transportation, and energy. These activities tend to be geographically concentrated, in particular heavy industries. This implies significant regional disparities not only between urban and rural areas, but even among the urban areas.

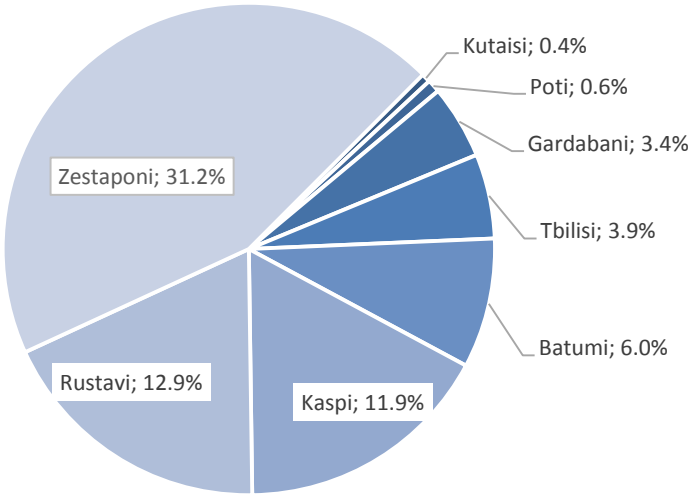
Figure 7.1. Share in total air pollution from stationary sources (in percent)



Source: Geostat webpage (2011)

Indeed there are large regional disparities in air pollution from stationary sources in Georgia. The bulk of air pollution is affecting Imereti and Kvemo Kartli, and to a lesser extent Shida Kartli and Adjara. Most of the air pollution in these regions is driven by single plants in specific cities, implying an even more uneven distribution of air pollution across different locations in Georgia. Two thirds of total air pollution in Georgia is concentrated in just three cities, in Zestafoni, Rustavi, and Kaspi. According to the Ministry of Environment Protection (2010), the main sources of emission are the Zestafoni Ferro Alloy Plant, aluminium and fertilizer factories and the Gardabani power plant in Rustavi, and the cement factory in Kaspi.

Figure 7.2. Share of cities in total air pollution (in percent)



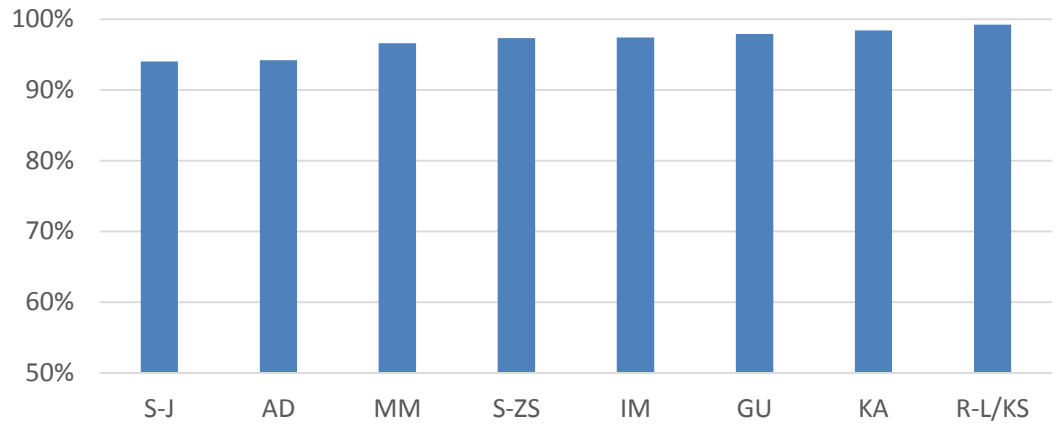
Source: Ministry of Environment Protection (2010)

These significant disparities in air pollution are likely to be somewhat lower if one would include air pollution from the transportation sector. Nevertheless, large disparities are likely to remain, suggesting that a small share of the Georgian population endures the bulk of air pollution.

Water Pollution

In 2009 about two-thirds of the Georgian population in 45 cities were served by sewage system. Most of these sewage systems reportedly were in poor condition, resulting in significant pollution of downstream water resources (UNICEF, 2012). The situation is even worse outside the large cities, with the more recent Village Infrastructure Census reporting that the vast majority of Georgian villages have no access to sewerage systems. This is true for all Georgian regions, with little variation across regions.

Figure 7.3. Share of villages having no access to a sewage system (in percent)



Source: Village Infrastructure Census (2011)

In 2003 only Tbilisi and Khashuri had sewage systems that treated the collected wastewater (OECD, 2004). Since then the situation has improved, as in 2009 sewage systems in Tbilisi, Rustavi, Kutaisi, Tkibuli, Gori and Batumi included at least one stage of mechanical treatment (UNICEF, 2012). No readily available data exists on developments since 2009, but a cursory look at the webpages of the United Water Supply Company of Georgia, Georgian Water & Power, and Batumi Water suggests considerable investments into the modernization and rehabilitation of existing sewage systems across Georgia. That is, sewage systems in urban areas, suggesting that if anything these investments will both decrease disparities between urban areas and increase disparities between urban and rural areas.

Waste Management

This section is exclusively based on a report by Clean Up Georgia (2012). In Georgia only about one third of solid waste is managed, with the remainder being dumped on unregulated and unmanaged landfills. The vast majority of landfills are located in and are serving urban areas, with only about one third of all landfills being actively managed.

Even across urban areas large disparities exist. Tbilisi has the largest amount of collected waste, even if controlling for population. Tbilisi also has the largest professional waste collection workforce, and the largest number of waste collection equipment. To what extent the large amount of collected waste is the cause or the consequence of the large workforce is unclear. Other regions lag behind, even those regions with large urban areas. The only exception is Kvemo Kartli, which rivals much larger regions. A likely explanation is the existence of the Gardabani landfill which services both Rustavi and Tbilisi.

Table 7.4.Waste collection

	Amount of collected waste		Number of containers	Amount of workforce engaged in collection	Amount of equipment involved in the process of collection
	Collected waste(m3)/ Thousand population	Waste collected per Month (m3)			
Tbilisi	127.9	150,000	1,4000	3,200	153 dust trucks compactor
Adjara	79.3	31,204	3,713	211	no data
Guria	14.2	1,990	593	176	5 compactors, 5 dust trucks, 5 dump trucks
Racha-Lechkhumi and Kvemo Svaneti	16.9	792	120	6	1 compactors, 3 dust trucks
Samegrelo Zemo Svaneti	67.2	32,230	1,560	219	1 compactors, 16 dust trucks
Imereti	31.8	22,523	1,244	267	1 compactors, 58 dust trucks, 5 dump trucks
Kvemo Kartli	8.6	4,412	1,839	555	26 compactors, 26 dust trucks, 2 dump trucks
Shida Kartli	24.6	7,741	721	196	33 dust trucks
Samtskhe-Javakheti	27.5	5,895	494	186	22 dust trucks
Mtskheta Mtianeti	41.2	4,514	595	54	14 dust trucks
Kakheti	19.3	7,865	1,221	191	30 dust trucks

Source: Clean Up Georgia (2012)

Summary: There is little data available on air, water, and soil pollution. While most of this pollution is likely to be localized, this very uneven distribution should be a prime concern for environmental policy. As for infrastructure, sewage and waste management services exhibit large regional disparities, mainly between urban and rural areas, and between Tbilisi and other urban areas.

Cultural and Recreational Resources

Cultural and recreational resources and their accessibility can serve as a proxy for the quality of life in different regions. Out of general considerations, and given the lack of data for cultural and recreational resources in Georgia, it is unfortunately a poor proxy for the quality of life. The reasons are manifold. There are a large number of different cultural or recreational resources, from opera houses to playgrounds. Counting cultural and recreational resources and possibly even evaluating their quality and accessibility will give a large number of measures. These measures are hard to aggregate without making broad assumptions on household preferences.

Household preferences are also crucial because the availability of cultural and recreational resources is also driven by demand. These general problems are compounded in the case of Georgia because little data on the multitude of possible cultural or recreational resources is available.

Cultural Resources

Geostat provides regionally disaggregated data on museums, professional theaters, and to a limited extent also on public libraries. No other readily available data on cultural resources exists at ministries or other organizations, to the best of our knowledge.

Table 8.1. Museums

Region	Number of Museums	Museums per 100,000 population	Annual Attendance, thsd.	Number of exhibitions
Tbilisi	39	3.4	171.3	223
Adjara	14	3.6	57.9	90
Guria	11	7.8	12.9	16
Imereti	27	3.8	65.1	83
Kakheti	30	7.4	125.7	79
Mtskheta-Mtianeti	9	8.2	36.7	45
Racha-Lechkhumi and Kvemo Svaneti	5	10.6	12.4	23
Samgrelo-Zemo Svaneti	18	3.8	56.9	43
Samtskhe-Javakheti	7	3.3	53.3	15
Kvemo Kartli	10	2.0	18.0	27
Shida Kartli	13	4.2	97.7	42

Source: Geostat webpage (2011)

Museums appear to be relatively evenly distributed among regions, with no strong relation to the size of the region or urbanization rates. At the same time the number of museums or annual attendance offers little insight into the quality of life in regions. Large visitor numbers in Shida Kartli, for example, are driven by the Stalin Museum and Uplitsikhe, which in 2010 accounted for 68.1 percent of all visitors to museums in this region (Georgian Museums Association, 2013). Likely a significant share of visitors to these museums are international or out of region visitors. Focusing on museums of only regional importance, the Georgian Museums Association almost uniformly reports visitor numbers of less than 1000 per year for local museums. This suggests that most museums in Georgia are either of national importance, benefiting not just their home region, or are small museums of local importance, but largely ignored by the local population.

In contrast to museums professional theaters are much more unevenly distributed across regions. Tbilisi and the relatively more urbanized regions Imereti, and Adjara tend to have more theaters, both in absolute numbers and per capita. The major exception is Samtskhe-Javakheti, which despite its small population size has three professional theaters, possibly related to the large share of ethnic Armenians in this region. Attendance in general is low, and it appears that only in Tbilisi theaters are of real significance.

Table 8.2. Professional theaters

Region	Number of Theaters	Theaters per 100,000 population	Annual Attendance, thsd.	Number of performances
Tbilisi	23	2.0	302.4	2342
Adjara	3	0.8	20.1	199
Guria	1	0.7	n.a.	n.a.
Imereti	6	0.9	35.9	460
Kakheti	2	0.5	n.a.	n.a.
Mtskheta-Mtianeti	0	0.0	0	0
Racha-Lechkhumi and Kvemo Svaneti	0	0.0	0	0
Samgrelo-Zemo Svaneti	3	0.6	13.2	151
Samtskhe-Javakheti	3	1.4	18.2	233
Kvemo Kartli	1	0.2	n.a.	n.a.
Shida Kartli	1	0.3	n.a.	n.a.

Source: Geostat webpage (2011)

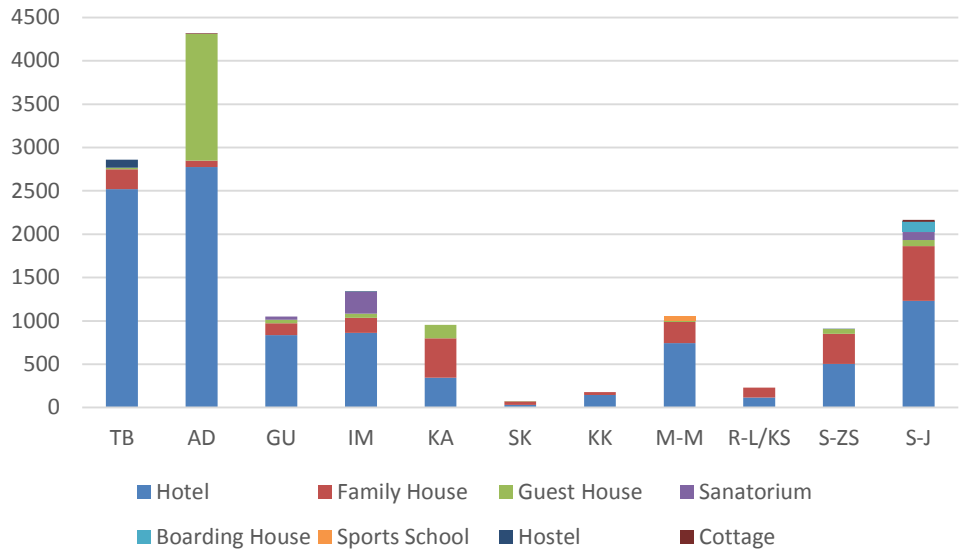
Geostat also provides data on public libraries. This data is provided only up until 2008, with no indication of the quality or size of the public library. While there were 2123 public libraries in Georgia in 2003, and 1726 in 2006, that number shrank within one year to 672 in 2007 respectively 824 in 2008. Given these large fluctuations it is unclear to what extent the 2008 data is informative about the current situation. Furthermore, the data suggests that while in 2008 Tbilisi had 58 public libraries and Adjara only seven, much smaller Racha-Lechkhumi and Kvemo Svaneti had 86 libraries. Whether these numbers reflected reality, or are indicative of data issues is thus not clear.

Recreational Resources

Neither Geostat nor any ministry provides data on recreational resources such as urban parks, playgrounds or sports facilities. While most of these data gaps could be filled by hand collecting data from municipalities, this data collection exercise is beyond the scope of this report.

Some limited data on tourism and tourism infrastructure is provided by the Georgian National Tourism Administration (2013). Clearly, there are large differences in tourism activity across regions. In particular, the number of rooms in different regions suggests that tourism seems to be focused on seaside tourism in Adjara, city tourism and business travel in Tbilisi, and winter and health tourism in Samtskhe-Javakheti (Bakuriani and Borjomi). A similar pattern emerges for the number of food outlets and the popularity of tourist destinations, as reported by the Georgian National Tourism Administration (2013). While this suggests that there is significant potential for some regions to increase tourism activity, there is insufficient data to guide such an evaluation. In particular, no data on actual domestic and international visitor numbers by region or tourist destination is available.

Figure 8.3. Number of rooms by establishment type



Source: Georgian National Tourism Administration (2013)

Summary: Little hard data is available on the provision and use of cultural or recreational resources. Given the focus of the Georgian economy on tourism, and the potential for tourism in most or even all regions of Georgia, this is a major data gap. What data is available suggests that cultural resources are mainly concentrated and overwhelmingly used in Tbilisi. Tourist facilities are somewhat less concentrated in Tbilisi, and exist mainly to cater to seaside and winter tourism.

Analysis of Regional Disparities

Are there Large Regional Disparities?

While there is no question that there are regional disparities, many if not most of these disparities appear to be driven by differences between urban and rural areas. Relatively more urbanized regions, and in particular the capital city Tbilisi, tend to have a higher per capita gross value added, a more diverse and sophisticated economic structure, and a better developed infrastructure. Controlling for urbanization these indicators do not seem to vary significantly across regions. More urbanized regions also tend to have higher unemployment, likely reflecting a large share of subsistence farmers in rural areas being counted as employed.

Important dimensions of regional disparities that cannot be explained by differences in urbanization alone, are standards of living, inequality and poverty. Both rural regions such as Samtskhe-Javakheti or relatively more urban regions such as Imereti have high per capita incomes, low inequality and a low incidence of poverty. At the same time, both rural regions such as Kakheti and relatively more urban regions such as Adjara or Kvemo Kartli have low per capita incomes, high inequality and a high incidence of poverty. There is no straightforward explanation for this pattern, given that neither the level of urbanization, economic performance or structure, nor infrastructure would predict these outcomes. One possible explanation are data and sampling issues. Household and per capita income, and by extension measures of inequality

or poverty, are estimated from the Integrated Household Survey. With a large variability of household incomes within regions, and a comparably modest sample size at the regional level, comparisons between different regions are perilous. Given the importance of these indicators for regional and social policy, the upcoming census is of great importance for deriving reliable estimates of income, inequality, and poverty at the regional level.

From a policy perspective it is important to note that even if the data is taken at face value, the largest interregional differences in incomes are small compared to the large differences in incomes within regions. This would suggest that the primary policy tools to address income disparities across and within regions are the tools of social policy.

It should be noted that not much can be said about disparities between mountainous and lowland regions, given the existing data and the scope of this study.[15] Most mountainous areas are part of larger regions that also include lowland areas. Examples are Tusheti being part of the Kakheti region or Svaneti being part of the Samegrelo and Zemo Svaneti region. The only self-contained mountainous region, Racha-Lechkhumi and Kvemo Svaneti, in most statistical indicators is lumped together with much larger Imereti.

What are the Regions of Georgia?

The regions of Georgia are not units legally defined by the constitution and have not their own legal authority, taxes, or finances. Rather, they are mainly groupings of municipalities for administrative and statistical purposes. Georgia's regions are also comparably small, with the average Georgian region being closer to NUTS-3 than to NUTS-2. Within the EU, regions formed for regional policy purposes are at the NUTS-2 level, reflecting twenty years of experience. Georgia might or might not follow the European Union approach to regional policy, depending on what a careful study of the Georgian context would reveal. If Georgia would follow a similar approach to regional policy then the existing regions are too small and would need to be combined into larger units. How regions should be combined into larger units is unclear. Given the small size of Georgia there is scope for at most four to five NUTS-2 level regions formed for the purpose of regional policy. In fact, all of Georgia could easily form just one NUTS-2 region, given that Georgia is comparable in size to many existing NUTS-2 regions in the European Union.

A World Bank (2013) study suggests a typology of Georgian regions according to their economic structure. Tbilisi is classified as a leading region, with a well-diversified economy with a well-developed infrastructure and educated work force. Adjara and Imereti are classified as second-tier regions, with less diversification than Tbilisi. Samegrelo and Zemo Svaneti, Kvemo Kartli, and Shida Kartli are classified as third-tier regions, less urbanized and less industrialized than Adjara or Imereti. Lastly, the other regions, in particular Kakheti, Guria, and Samtskhe-Javakheti are classified as lagging regions, with a large share of agriculture.

Broadly speaking this classification is sensible, if one accepts the restriction that any regions formed for regional policy purpose are formed along existing regions. But this can be problematic as several regions of Georgia combine widely different areas. For example,

[15] The Millenium Challenge Corporation Survey classifies settlements according to terrain. Theoretically this information could be matched with the Integrated Household Survey, if Geostat for each observation would report the municipality. Presumably this is currently not done to preserve the anonymity for interviewed households in small municipalities.

Samegrelo and Zemo Svaneti combines the lowland areas of Samegrelo, the port of Poti, and the large urban areas of Poti and Zugdidi, with mountainous and sparsely populated Upper Svaneti.

Along the lines of the World Bank report we suggest that it may be appropriate to group regions, for the purpose of regional policy, along the following broad boundaries:

1. A Tbilisi metropolitan region, not only including Tbilisi, but also parts of Shida Kartli, Kvemo Kartli, and Mtskheta-Mtianeti
2. A Western region formed by the Batumi – Poti – Kutaisi triangle, including most of Adjara, Guria, Samegrelo, Imereti
3. A Southern/Eastern region formed by Samtskhe Javakheti, lower Kvemo Kartli, Western Shida Kartli, and the non-mountainous parts of Kakheti
4. A mountainous region formed by Kvemo and Zvemo Svaneti, Racha-Lechkhumi, northern Shida Kartli, large parts of Mtskheta-Mtianeti, and northern Kakheti

The rationale for the Tbilisi metropolitan region follows the World Bank study, which suggests that there are important spillovers from the leading regions to the lagging regions that are in close proximity. The same rationale applies when justifying the formation of a Western region, with Batumi, Poti, and Kutaisi as anchors that support surrounding areas. None of these cities or regions alone has a diversified economic structure. Combined they have, with a large transportation sector in Samegrelo, a large manufacturing base in Imereti, and a large service sector in Adjara.

The proposed Southern/Eastern region is different from the Tbilisi metropolitan region and the Batumi – Poti – Kutaisi triangle, compromising mostly rural areas, whose regional economies are focused on Tbilisi. Lastly, the mountainous region is sparsely populated and overwhelmingly rural, and fundamentally different from any other Georgian regions.

This proposal for regions formed purely for regional policy purposes has to be seen as tentative and approximate, given the lack of data at the municipal level and given the lack of data on interregional mobility and trade.

Are Ethnic Minorities Disproportionally Affected by Regional Disparities?

Regional statistics are hardly the most appropriate statistic to assess the situation of ethnic minorities. In Georgia ethnic minorities mainly live in Samtskhe-Javakheti and in Kvemo Kartli. Both regions according to most indicators do not seem to be particularly disadvantaged. Important exceptions are income, inequality and incidence of poverty. While the data on living standards is problematic, as discussed in this report, it suggests that Samtskhe-Javakheti is relatively well-off, while Kvemo Kartli is not.

The report by the World Bank (2013) on urbanization suggests that possibly ethnic minorities are insufficiently integrated into Georgian society, based on the low share of subsistence allowance recipients in Samtskhe-Javakheti and Kvemo Kartli. While for Samtskhe-Javakheti the low share of recipients could be explained by relatively high household incomes, for Kvemo Kartli the share is indeed unexpectedly low. In this report we find that there are other possible indications of a low integration into Georgian society. The share of villages in Kvemo Kartli that are not able to access primary or secondary schools is the highest in Georgia. For both Kvemo Kartli and Samtskhe-Javakheti test scores in the national exam are at the lower end, in particular

in municipalities with large shares of ethnic Armenians or ethnic Azeris. On the other side, for the majority of indicators discussed in this report neither Kvemo Kartli nor Samtskhe-Javakheti stand out. It has to be emphasized that this is far from being a concrete finding, and is rather an indication that more research is needed.

Have Regional Disparities Widened or Narrowed over Time?

Few reliable and sufficiently long time series exist, with most regional statistics being only available for recent years. This makes it hard to evaluate whether Georgian regions are converging or diverging. Key indicators of regional convergence are regional per capita gross value added, per capita income, poverty incidence, unemployment, and various measures of infrastructure. Of all these variables only gross value added per capita is readily available in a reasonably long time series from 2006 to 2011. This time series suggests that in 2006 wide regional disparities in gross value added existed that cannot be explained by differences in urbanization rates. In contrast, in 2011 regional disparities in gross value added closely follow urbanization rates. This shift is largely explained by the high growth rates of two relatively more urbanized regions, Imereti and Adjara. This suggests that at least on some level regional disparities have narrowed over time.

Conclusions

In most dimensions the regions of Georgia are broadly similar, once one controls for differences between urban and rural areas. The major exceptions are various measures of living standards, which if the data is taken at face value vary moderately across regions, even after controlling for differences between urban and rural areas. At the same time, there are reasons to be skeptical about the underlying income data. This situation should change once a new census becomes available, allowing to validate and to improve the household survey. The other exceptions are various dimensions of infrastructure, in most of which Tbilisi is significantly ahead of the rest of Georgia, including other urban areas.

There remain other important and unanswered questions about regional disparities in Georgia. Many of these questions are currently unanswerable given the existing data. Large and systematic data gaps exist concerning infrastructure, environment, and the provision of cultural or recreational resources. While other dimensions of regional disparities are better covered, what data exists is usually only available at the national or regional, but not the municipal level. This forces any analysis to be along the boundaries of existing regions, and makes it hard to evaluate whether disparities exist between mountainous and lowland areas, for example.

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Annex I: Methodological Notes

These notes outline the procedures and methodology of the report on Regional Disparities in Georgia. A literature and data search preceded the analysis, and encompassed both internet searches and a study of the available data from Geostat, government ministries, international organizations and NGOs active in Georgia, and Master's or PhD theses produced at ISET, other Georgian Universities, the Central European University, and CERGE-EI. This search showed that little research on regional disparities exists, and that most of the existing data is based Geostat data. Very few unique datasets collected independently of Geostat exist.

The vast majority of data with a regional dimension is derived from the Integrated Household Survey (SHIDA), the Village Infrastructure Census (VIC), the Business Survey, and the MCC Settlement Infrastructure Survey (SIS). All four surveys had to be analyzed in different ways. Only for the Integrated Household Survey and the MCC Settlement Infrastructure Survey raw data is available. While the Integrated Household Survey is a sample of the whole population, the MCC settlement infrastructure survey covers almost all settlements. Thus the approach with the Integrated Household Survey was to compute sample averages and their standard deviation, while for the MCC settlement infrastructure survey the challenge was to aggregate settlement characteristics over regions. In contrast, both the Village Infrastructure Census and the Business Survey are not provided in raw format, and thus the statistics reported by Geostat were used.

Throughout the research data issues or data gaps were prevalent, most of which are discussed in detail in the report itself. Of note are difficulties in computing population densities for municipalities, due to contradictory data on the areas of municipalities. This issue was resolved by taking the areas reported by the 2002 census as authoritative. It should be noted that most discrepancies between the census and other sources were relatively small, and are not critical for any results. The only exceptions are Tbilisi and Batumi, whose boundaries have changed since 2002, and for which municipal data for the area was used.

For some indicators a choice had to be made between using statistics reported on the Geostat webpage, or to derive essentially the same statistic from the integrated household survey. The key difference between the two approaches is that the former only reports averages whereas the latter allows to derive also standard deviations and other summary statistics. Thus the latter approach was chosen for all indicators for which statistical significance is a potential issue. Using the Integrated Household Survey also allowed to compute various indices of inequality and poverty, including the Gini coefficient and the share of households below a specific percentage of median or mean income.

The settlement infrastructure survey is different in nature from the integrated household survey not only in its coverage, but also by reporting only one observation for each settlement. Given that it covers mainly infrastructure in principle each and every household in a settlement should yield identical observations, thus justifying the one observation per settlement restriction. Taking this as given, the main difficulty is to aggregate all observations across a region. Throughout the report simple averages are reported, thus giving the same weight to very small settlements and large cities. This can be justified as the settlement infrastructure survey excludes the very largest cities, and as population numbers in this survey are significantly differ from Geostat estimates.

The Village Infrastructure Census, the Business Survey, and all other Geostat or non-Geostat data sources report aggregate numbers for regions only, with the underlying raw data being

unavailable. This made it impossible to evaluate regional differences using statistical significance criteria, and made it impossible to evaluate alternative aggregation schedules across municipalities or settlements in a given region.

Given that one hypothesis of the report is that urbanization rates explain many of the observed regional disparities for selected indicators the indicator variable was regressed on urbanization rates, using a simple ordinary least squares framework. This allowed to determine the percentage of variance that is explained by urbanization rates alone.

Annex II: Data Sources

Population Size	Geostat webpage
Population Density	Geostat webpage, own calculations
Urbanization Rate	Geostat webpage
Natural Population Change	Geostat webpage, own calculations
Ethnic Composition	Integrated Household Survey
Internal Migration	Integrated Household Survey, Bell and Muhidin (2009
Regional Gross Value Added	Geostat webpage
Per Capita Gross Value Added	Geostat webpage, own calculations
Sectoral Shares	Geostat webpage
Sectoral Growth Contributions	Geostat webpage, own calculations
Labor Productivity	Geostat webpage, own calculations
Investment in Fixed Assets	Geostat webpage, own calculations
Size Structure of Firms	Geostat webpage
Ownership Structure of Firms	Geostat webpage
Agricultural Products by Region	Geostat webpage
Income from Selling Agricultural Products	Integrated Household Survey
Unemployment Rate	Geostat webpage
Unemployment Rate by Urban/Rural Areas	Geostat webpage
Employment Rate	Geostat webpage
Access to Secondary Education	Village Infrastructure Census
National Exam Scores	National Exam Center, private communication

Access to Vocational Education	Village Infrastructure Census
Per Capita Income and Cash-Flows	Integrated Household Survey
Sources of Income and Cash-Flows	Integrated Household Survey
Gini Coefficient	Integrated Household Survey, own Calculations
Population below Median Income	Integrated Household Survey, own calculations
Under Five Mortality Rate	NCDC Yearbook
Subsistence Allowance Recipients	Social Service Agency
Surface Cover of Roads	Settlement Infrastructure Survey, own calculations
Usability of Roads	Settlement Infrastructure Survey, own calculations
Use of Railway Stations	Village Infrastructure Census
Airport Passenger Numbers	Georgian Civil Aviation Agency
Quality of Electricity Supply	GNCC Annual Report
Supply Sources of Drinking Water	Geostat webpage
Share in Total Air Pollution	Geostat webpage
Share of Cities in Air Pollution	Ministry of Environment Protection Annual Report
Access to Sewage Systems	Village Infrastructure Census, own calculations
Waste Collection Infrastructure	Clean Up Georgia
Museum Statistics	Geostat webpage
Visitor Numbers of Museums	Georgian Museums Association webpage
Professional Theaters Statistics	Geostat webpage
Tourism Statistics	GNTA Statistics Portal